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MENTALLY DEFICIENT CHILDREN

MENTALLY DEFICIENT CHILDREN

THEIR TREATMENT AND TRAINING

BY

G. E. SHUTTLEWORTH, B.A., M.D., &c.

MEDICAL EXAMINER OF DEFECTIVE CHILDREN TO THE WILLESDEN EDUCATION COMMITTEE, AND FORMERLY TO THE SCHOOL BOARD FOR LONDON; CONSULTING MEDICAL OFFICER, NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED; LATE MEDICAL SUPERINTENDENT (NOW HON. CONSULTING PHYSICIAN), ROYAL ALBERT INSTITUTION FOR THE FEEBLE-MINDED OF THE NORTHERN COUNTIES, LANCASTER; FORMERLY ASSISTANT MEDICAL OFFICER, EARLSWOOD ASYLUM, AND MEDICAL EXPERT, M. A. B. INSTITUTION FOR IMPROVABLE IMBECILES, EALING

AND

W. A. POTTS, B.A., M.D., &c.

CONSULTING MEDICAL OFFICER, NATIONAL ASSOCIATION FOR THE FEEBLE-MINDED; CHAIRMAN OF THE AFTER-CARE COMMITTEE, AND MEMBER OF THE SPECIAL SCHOOLS COMMITTEE, BIRMINGHAM; LATE MEDICAL INVESTIGATOR TO THE ROYAL COMMISSION ON THE CARE AND CONTROL OF THE FEEBLE-MINDED; FORMERLY RESIDENT MEDICAL OFFICER, YORKSHIRE EAST RIDING LUNATIC ASYLUM

THIRD EDITION

PHILADELPHIA

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TO THE MEMORY OF

THE TRULY ILLUSTRIOUS

ÉDOUARD SÉGUIN, M.D.

WHO FOR FORTY-TWO YEARS,

BOTH IN THE OLD WORLD AND THE NEW,

PRACTICALLY AND WITH HIS PEN

LABOURED TO IMPROVE THE CONDITION OF

MENTALLY DEFICIENT CHILDREN

BY THE APPLICATION OF

PHYSIOLOGY TO EDUCATION;

THIS BOOK IS INSCRIBED.

He loved others better than himself."

PREFACE TO THIRD EDITION

A NEW edition of this little work having been called for, the original author has been fortunate enough to obtain in its revision the co-operation of Dr. W. A. Potts, of Birmingham, whose long practical experience as Chairman of the After-Care Committee and a member of the Special Schools Committee of that city, and exceptional opportunities of observation as one of the medical investigators appointed by the Royal Commission on the Care and Control of the Feeble-minded, render him thoroughly conversant with the subjects therein dealt with. It is hoped that in this collaboration will be found combined the knowledge of what has been done in former years for the improvement of the mentally deficient class, and an up-to-date acquaintance with more modern movements affecting them. The voluminous Report of the Royal Commission recently issued has been laid under contribution, and it has been thought desirable to add in this edition a practical chapter on the medical examination of children requiring special instruction.

The original author has been much encouraged by the kind reception accorded to the previous editions, not only by medical colleagues in the British dominions and in America, but by the increasing number of others interested in the treatment and

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training of mentally deficient children. He may mention also with some satisfaction that a French translation of the second edition, undertaken by his friend Dr. Auguste Ley, of Brussels, has enjoyed a gratifying degree of professional favour on the Continent.*

Several new illustrations are introduced into this edition, for some of which he has to thank Drs. Moorhead Murdoch, A. C. Rogers (of America), Telford-Smith, Archibald Douglas, R. P. Cockburn, and other professional friends. He has also to express obligations to Dr. Carson, of Syracuse, N.Y., Dr. Caldecott, of Earlswood, and to Dr. James Kerr, Chief Medical Officer (Education), London County Council, for kind assistance in allowing him to use valuable information which they have accumulated.

May, 1910.

* A French translation of the second edition of this work under the title of "Les Enfants Anormaux au point de vue mental," is published by J. Lebègue et Cie., Libraires Éditeurs, 46, Rue de la Madeleine, Bruxelles.

PREFACE TO FIRST EDITION

In offering this little Manual to the Medical Profession, and to the increasing number of the Public who take an interest in the special education of mentally deficient children, the author trusts that the experience acquired by the proverbial " quarter-of-a-century's " successive residence in two of the largest Training Institutions for Imbeciles may aid him in setting forth both the salient peculiarities of the class and the ameliorative measures found most useful. He does not profess to bring forward much that is new, but rather to collect and mould into book form various papers published by him during the last twenty years in Medical Journals and the Proceedings of Societies.

In the present volume, the pathology of the subject is only touched on to supply a few practical hints which may be of service to the medical man in his diagnosis, prognosis, and recommendations, when consulted in the case of a mentally feeble or deficient child. Though his standpoint is that of the physician, and not of the teacher, the author hopes that his observations upon special educational methods, based as they are upon physiological principles, may not be without value to those engaged in the practical work of instruction. For the successful training of the mentally deficient child, the physician and the teacher

must go hand in hand; and it will be a satisfaction to the author if in some slight degree this book realizes the aspirations of Séguin, who was both. "Let us physicians," he says (in the course of an address to a New York medical society), "help to build the programme of physiological education already sketched in the School for Idiots. . . . The demonstration therein given is that the physiological education of the senses is the royal road to the education of the intellect; experience, not memory, the mother of ideas."

May, 1895.

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MENTALLY DEFICIENT CHILDREN

THEIR TREATMENT AND TRAINING

CHAPTER I

HISTORICAL RETROSPECT

UPWARDS of seventy years have now passed since serious and systematic efforts were first made to improve the condition of the mentally deficient child. The labours of Séguin, at the Bicêtre Hospital in Paris, gave the earliest impetus to scientific work having for its object (in the words of Esquirol) "the removal of the mark of the beast from the forehead of the idiot." It is true that some essays had been previously made in France by Itard, Voisin, Esquirol, and others; and the experiments of Itard on the boy found running wild in the woods of Aveyron (*le sauvage de l'Aveyron*), of which he published an account in 1801, doubtless contributed materially to a rational understanding of congenital defects of intellect. In 1837 Séguin, an old pupil of Itard and Esquirol, commenced to instruct an idiot child, and after gaining some experience at the Hospital for Incurables, he was appointed in 1842 to apply his method to the education of the idiot children of the Bicêtre. About the same date, Dr. Saegert,

in Berlin, and Dr. Guggenbühl, in Switzerland, independently took in hand the ameliorative treatment of mentally feeble children. The conspicuous success of the work of Guggenbühl in improving the condition of cretins by removing them from sequestered and shadowed alpine valleys to the sunshine of the summit of the Abendberg, made a great impression on philanthropists both in Europe and America, and demonstrated, as by an object-lesson, the interdependence of physical and mental amelioration. Saegert seems to have laboured somewhat upon the lines of the instruction he had been accustomed to give to deaf-mutes, with such adaptations as were necessary to the case of imbecile children. The school established by him is still carried on at Berlin, though with the disadvantage of being organised as a department of a lunatic asylum. It was a curious coincidence that almost simultaneously in France, Switzerland, and Germany, independent efforts were inaugurated for the benefit of the mentally defective class; and the year 1842 must be looked upon as an epoch memorable in this matter. Although Séguin is entitled to the credit of priority, he himself modestly avers that "at certain times and eras, the whole race of man as regards the discovery of truth, seems to arrive at once at a certain point, so that it is hard to say who is the discoverer." In 1843, however, the merits of Séguin were publicly recognised by the illustrious Voisin, in a paper read by him before the French Royal Academy of Medicine. "Already in 1838," says he, "Séguin had published the result of his efforts on behalf of a certain number of pupils, whose condition he has favourably modified. His studies during a later period are entirely unique; and I do

not doubt that the time is not far distant when he will be entitled by his psychological contributions to take a distinguished place amongst his contemporaries." Voisin's prognostications were fully justified by the publication, in 1846, of Séguin's *magnum opus* entitled "Traitement moral, Hygiène et Éducation des Idiots et des autres Enfants Arriérés." This book may indeed be regarded as the *magna charta* of the mental emancipation of the imbecile class.

Defining idiocy as "an infirmity of the nervous system, which has for its effect the abstraction of the whole or part of the organs and the faculties of the child from the normal action of the will," he proceeds to divide all cases into two principal classes, those of profound, and those of superficial idiocy. The basis of the treatment which he proposes is in the main identical with that which in later works he described under the designation of **physiological education.** Starting with the axiom that "The education of the senses must precede the education of the mind," he argues that the true physiological method of tuition for persons whose nervous system is imperfectly developed is (1) "to exercise the imperfect organs so as to develop their functions," and (2) "to train the functions so as to develop the imperfect organs." Ingenious devices are described whereby the organs of the senses may be methodically exercised, and cases are given in minute detail in which such exercises have been adapted to special incapacities. Séguin himself defines his system as an "adaptation of the principles of physiology, through physiological means and instruments, to the development of the dynamic, perceptive, reflective, and spontaneous functions of youth."

In Great Britain some interest had been aroused by the publication, in 1843, of an account by Dr. William Twining of what he had witnessed at Guggenbühl's institution on the Abendberg. This, indeed, seems to have led to the establishment, in 1846, of a small school for imbeciles at Bath, under the management of the Misses White, which, subsequently carried on as a private establishment by Miss Heritage, has now developed into the Magdalen Hospital School,* Combe Down, under the management of the Trustees of the Municipal Charities of Bath. Articles by Mr. Gaskell (afterwards a Lunacy Commissioner) and Dr. Conolly (the enlightened Superintendent of Hanwell Asylum) upon the work of Séguin at the Bicêtre, which appeared in 1847, led to a further practical development in England, and in 1848, Park House, Highgate, the mother institution of Earlswood and of the Eastern Counties Asylum at Colchester, opened its doors for the treatment and training of the imbecile, Dr. Conolly and Dr. Reed acting as its gratuitous secretaries.

Meanwhile the New World was closely treading upon the heels of the Old in the onward march of progress in the education of imbeciles. Early efforts had indeed been made in the most progressive of the United States to benefit idiots by training them in connection with special schools for the deaf, and for the blind; but Massachusetts was the first to move in specific provision for this class by appointing "Commissioners to inquire into the condition of idiots in the Commonwealth, to ascertain their number, and whether anything can be done for their relief." Dr. S. G. Howe, well known as the successful instructor of the blind deaf-mute, Laura Bridgman,

* See note at end of Chapter.

was the Chairman of this Commission. Their Report, issued in 1848, with elaborate statistical tables, led to a grant by the Legislature of 2,500 dollars for the establishment of an " experimental school for feeble-minded children " ; and about the same time a private school was opened at Barre, Mass., by Dr. H. B. Wilbur, being " designed for the education and management of all children who by reason of mental infirmity are not fit subjects for ordinary school instruction."

In 1851 an " experimental school " was started by the State of New York ; and this subsequently developed into the State Asylum at Syracuse, over which Dr. H. B. Wilbur long and ably presided. The first report of the Trustees so well sets forth the aims and limitations of training that we are tempted to quote a few lines as follows :

" We do not propose to create or supply faculties absolutely wanting ; nor to bring all grades of idiocy to the same standard of development and discipline ; nor to make them all capable of sustaining creditably all the relations of a social and moral life ; but rather to give to dormant faculties the greatest possible development, and to apply these awakened faculties to a useful purpose under the control of an aroused and disciplined will. At the base of all our efforts lies the principle that, as a rule, none of the faculties are absolutely wanting, but dormant, undeveloped, and imperfect."

Since the decease of Dr. Wilbur, in 1883, the " Syracuse State Institution for Feeble-minded Children " (as it is now designated) has been ably directed by Dr. J. C. Carson, and has now 555 inmates.

Pennsylvania was next in order in establishing a " Training School for Feeble-minded Children."

Taking up the private enterprise of Mr. J. B. Richards, a State-aided charity was formed, in 1853, which, under the fostering care of its late Superintendent, Dr. Isaac Kerlin, and his assistant and successor, Dr. Martin Barr, has become (at Elwyn) a model village for the feeble-minded.

The State of Ohio provided for her feeble-minded children in 1857, and the Institution at Columbus, with its splendid stock-farm, is appointed on the most liberal scale, and contains about 1,500 inmates under the care of Dr. Emerick, the successor of Dr. Doren, who for over thirty years wisely directed its development.

Connecticut, Kentucky, and Illinois, were also early in the field, having established State Institutions for the feeble-minded between 1855 and 1865. It is noteworthy that all the early American Schools were organised on strictly educational lines, the imbecile institution being regarded (in the words of Dr. Howe) "as a link in the chain of common schools—the last indeed, but still a necessary link to embrace all the children in the State."

The influence of Dr. Séguin, who, after his migration from Paris to the United States in 1850, was more or less associated with the organisation of several of the early American Institutions, tended to inspire enthusiasm in the educational work undertaken, and perhaps a somewhat exaggerated view of its resulting possibilities. We find, however, the more sanguine views put forth in some of the early Reports gradually sobering down with experience, and in 1872 we note Dr. Wilbur setting forth to his Trustees in very clear language the limitations inevitable in cases of original defect. "The same limitations" (he writes) "hold here as in any other system of education. These

depend upon the individual capacities of the pupil. Now and then one of the pupils absolutely passes from the condition of idiocy, and leaves the Institution capable of caring for himself thereafter. These are the exceptions ; the rule is otherwise. Ordinarily, the highest aim of the training is to send out the subject of it, at the end of the course, so improved as to be capable of some useful occupation, under intelligent direction." Dr. Wilbur proceeds to point out that these conditions involve the necessity of supplementary *custodial* institutions, and from this time forward such a consideration seems to have been more or less kept in mind in the provision of State care for the feeble-minded.

In 1898, according to Dr. F. M. Powell's Report to the National Conference of Charities and Correction, there existed twenty-four public Institutions for this class, maintained by nineteen States, and one by the city of New York. Dr. J. C. Carson has kindly furnished us with a return up to December, 1908, enumerating thirty-one similar public Institutions, amongst those not mentioned in preceding pages being the California Home at Eldridge ; the Iowa Institution at Glenwood ; the Indiana School at Fort Wayne ; the Kansas School at Winfield ; the Wrentham State School, Massachusetts ; the Michigan Home, Lapeer ; the Minnesota School at Faribault ; the Maryland Asylum and School at Owings Mills ; the Missouri Colony at Marshall ; the Nebraska Institution at Beatrice ; the North Dakota Institution at Grafton ; the New Hampshire School at Laconia ; the New Jersey School for Children and Custodial Institution for Feeble-minded Women at Vineland ; the New York Custodial Asylum for Feeble-minded Women at Newark ; the New York State Custodial Asylum at

Rome; the Western Pennsylvania State Institution for Feeble-minded Youths at Polk; the Pennsylvania (Custodial) State Institution for Feeble-minded and Epileptics at Spring City; the Rhode Island School at Slocums; the South Dakota Northern Hospital at Redfield; the Washington State Institution at Medical Lake; and the Wisconsin Home at Chippewa Falls. It would appear that special resident accommodation is thus afforded from public sources for over 18,000 cases, as compared with 8,492 in 1898.

In our own country, unfortunately, no such rate of progress can be reported. The only material addition during the twelve years to the specific accommodation for imbecile children in rate-supported asylums is the opening, in 1904, of a separate block for ninety such cases at the East Sussex Asylum at Hellingly; so that, besides the Institutions of the Metropolitan Asylums Board, which provide for upwards of 1,000 children at Darenth and Tooting Bec, as well as for about 5,000 adult imbeciles and harmless lunatics there and elsewhere, the Poor-Law provision in the way of separate wards and annexes to county asylums in England and Wales comprises not more than about 600 beds, in connection with the county asylums at Northampton, Wandsworth (Middlesex), Fareham (Hants), Chatham (Kent), Durham, Winwick (Lancashire), Burntwood (Staffs) and the Birmingham City Asylum at Rubery Hill. The six registered "idiot establishments"—the Earlswood and Royal Albert Asylums, the Western Counties, Eastern Counties, and Midland Counties Asylums, and the Magdalen Hospital School at Bath—all charitable foundations—afford accommodation for an aggregate of about 1,900. We may consequently set down the aggregate provision in England and Wales for imbecile children

(as such) at about 3,500; while special custodial provision exists for about 5,000 adult imbeciles. In Scotland there are two special institutions (charitably founded) at Larbert and Baldovan, with an aggregate of about 450 inmates; and in Ireland only one—the Stewart Institution, near Dublin—with about 100 imbecile inmates. The United Kingdom can therefore claim only about half the provision for imbeciles made by the United States—*i.e.*, 9,000 against 18,000—but it must be remembered that the population of the latter is something like 80,000,000, as compared with 45,000,000 in the former, so that the relative inadequacy of provision in this country is not so great as might be supposed, especially if we include some 600 in residential institutions for "mentally defective" children under the Act of 1899. But the whole subject will be further considered in a future chapter in connection with the Report of the Royal Commission on the Care and Control of the Feeble-minded.

NOTE.—It may be of historical interest to add some information with regard to the Magdalen Hospital School at Bath, which has quite recently come under the notice of the authors through the kindness of E. Newton Fuller, Esq., LL.B., Clerk to the Trustees of the Bath Municipal Charities. It seems that a hospital for lepers, founded in the eleventh century, was attached to the "Priory" at Bath, and that as the demand for accommodation of lepers diminished, lunatics and idiots took their place. It is probable that idiots, together with other inmates, have been cared for at this medieval hospital since about the sixteenth century—an interesting link with the past. The present Hospital School for Imbecile Children was the outcome of a scheme of the Charity Commissioners in 1894.

CHAPTER II

THE "FEEBLE-MINDED" OR MENTALLY FEEBLE CHILD

HAVING traced the progress of educational efforts on behalf of children with mental defect so obvious as to mark them as idiots or imbeciles, we must now refer to those less definite cases of mental infirmity which, in recent years, have been described under the specific designation of "Feeble-minded." It may be well to explain that, according to American usage, this term has long been employed* "to include all degrees and types of congenital defect, from that of the simply backward boy or girl, but little below the normal standard of intelligence, to the profound idiot, a helpless, speechless, disgusting burden; with every degree of deficiency between these extremes." Consideration for the feelings of relatives has doubtless been the motive for this euphemism, which, however, has not obtained in our own country, where "idiocy" has been used officially to cover the lower grades, and "imbecility" the higher grades of certifiable mental defect. Of late years, however, public attention has been drawn to a class of children who, while not imbecile, present a certain amount of mental deficiency, disqualifying them from profiting by the ordinary educational curriculum, and consequently require special modes of instruction. Such

* Fernald, *History of Treatment of Feeble-minded*, p. 20. Boston, 1893.

children were referred to in the Report (in 1889) of the "Royal Commission on the Blind, Deaf, and Other Classes requiring Exceptional Modes of Education," under the designation of "feeble-minded," and this term thus acquired in this country a special significance. The Royal Commission on the Care and Control of the Feeble-minded has given precision to the term by defining as *feeble-minded* "persons who may be capable of earning a living under favourable circumstances, but are incapable from mental defect existing from birth or from an early age (*a*) of competing on equal terms with their normal fellows; or (*b*) of managing themselves and their affairs with ordinary prudence."

Under the auspices of the British Medical Association, the Charity Organisation Society, the British Association for the Advancement of Science, the International Congress of Hygiene and Demography, and other public bodies, laborious investigations were long ago undertaken by several committees more or less connected, Dr. Francis Warner being the active conductor of the inquiry. After several preliminary publications a comprehensive "Report on the Scientific Study of the Mental and Physical Conditions of Childhood; with particular reference to children of defective constitution; and with recommendations as to Education and Training," was issued in 1895 by the Committee, Parkes Museum, Margaret Street, W. This Report is stated to be based upon the examination of 50,000 children seen in 1888-91, and of another 50,000 seen in 1892-94. It would appear, however, that whilst 100,027 children passed in groups under the eye of the medical examiner, the number of children individually noted and registered was 18,127, no note being taken of the 81,900 children not presenting

obvious physical defect, or not reported by teachers as mentally dull.* *Defects in development*, such as abnormalities of cranium, of external ear, of eyelids, of palate, of nasal bones, and of stature, were noticed in 9,777 cases; *abnormal nerve signs*, such as defect in general balance, overacting frontals, corrugation, defective eye movements, defects of balance of head or hand, finger-twitches and lordosis, together with deafness, defective speech, slow response, etc., were observed in 10,355 cases; *low nutrition* was registered against 3,522 children, who were pale, thin, or delicate; and 7,391 children were, on report of teachers, entered as *mentally dull*. Obvious *eye-defects* were noted in 2,929 cases: evidences of *rickets* (other than cranial) were registered in 244; 811 children were put down as "exceptional," including 2 idiots, 51 imbeciles, 275 children feebly-gifted mentally, 19 "mentally exceptional" (moral imbeciles, etc.), 110 epileptics, 5 deaf-mutes, 374 children crippled, maimed, and paralysed. Very elaborate tables are given showing the coincidence and co-relation of the various classes of defects; but we must content ourselves with quoting the following estimate from the body of the Report (p. 28) of the co-relation of *binary* defects in development (*two* malformations coincident in the same case) in percentages, thus:

"With mental dulness . . .	45·7
With low nutrition . . .	31·0
With nerve signs . . .	60·3."

This co-relation is higher than for single defects, and it is remarkable that the number of combined defects was much higher in the case of boys than of girls—*i.e.*,

* See Plate I., Figs. 1, 2, 3, 4.

PLATE I.

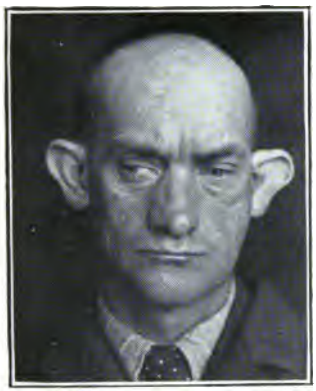

FIG. 1.—MISSHAPEN "MOREL" EAR: CONGENITAL IMBECILE.

FIG. 2.—CONGENITAL IMBECILE WITH CONVOLUTED SCALP.

FIG. 3.—EAR SHOWING DARWINIAN TUBERCLE.

FIG. 4.—MONGOLIAN IMBECILE, SHOWING FRONTAL CORRUGATION.

DEFECTS IN DEVELOPMENT.

From *Journal of Psycho-Asthenics*, vol. xi. (by kind permission of Drs. Moorhead Murdoch and A. C. Rogers).

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in the proportion of 1,240 to 683.* With the exception of "low nutrition" defective conditions are more common in boys than in girls; though when defects occur they are usually of more serious character in the case of the latter.

The general conclusion arrived at with regard to children that require special care and training is that the proportion varies from 1·6 per cent. of the first series of 50,000 cases to 0·88 of the second series of 50,000. Putting both series together, we get for the 100,000 cases observed a percentage of 1·261 as requiring special instruction, but it must be remembered that this proportion includes 278 children on the score of physical defects only, without signs of mental dulness.

These figures are in complete harmony with the findings of the Royal Commission on the Care and Control of the Feeble-minded. In the section of their Report dealing with the Education Authorities and Mentally Defective Children we find this paragraph: "In conclusion, following the data of the medical investigators, we may say that, in England and Wales, the number of mentally defective children may be expected to be, in the areas urban and rural, 0·79 per cent. of the number of children on the school registers, falling as low as 0·28 in a northern colliery district, and rising as high as 1·12 and 1·24 in urban areas."

Dr. Warner's methods, on which the inquiry of 1895 was based, were well set forth in an interim Report, published in 1893, and from this we extract a few particulars which may interest our readers.

The basis of the method is the principle that "all

* 26,287 boys and 23,713 girls were seen in this series of cases.

expression of nerve states and of mental action is by movements and results of movement,"* and consequently abnormal movements, and even attitudes, may be taken to denote abnormal nerve states or mental action. Correlated with these are frequently found defects in development and in nutrition; combinations of the three factors, defects in development, nerve signs, and low nutrition, being constantly met with. Mental dulness is found associated in greater or less degree with these physical abnormalities, which may consequently be regarded as, at any rate, warning notes of intellectual defect.

Dr. Warner's method of inspecting a school is as follows:

"The pupils are observed as they stand in rank, usually a standard, or a smaller section at a time. The inspector, standing in front of each child, in turn holds a shilling for him to look at, so as to fix his eyes and thus obtain a full face, as well as a profile, view of each side, noting the features separately, the cranium, the expression and muscular action of the parts of the face, the eye movements and other points. The trained observer can read off the points in the physiognomy of the individual features and their parts, noting the proportion and form of each.

"Having inspected each child in the line, as described, the children are asked to hold out their hands in front of them, and for a moment the action is done before them. The balance of the hand, spine, shoulders, as well as the arms, hands, and fingers, are noted in each case; finally the observer places his hand on the head, noting the size, form, bosses, etc., and the palate is inspected in each case.

* *Milroy Lectures*, 1892.

"At each of these stages in the inquiry, children presenting deviations from the normal, in any particular, are asked to stand aside. The teachers are then asked to present any exceptional or dull children not picked out by the observer.

"Each selected child is examined individually, and noted on a schedule form* in which the defect or abnormal size is verbally described, and the teacher's report of the child's mental status is added. The name, age, and standard of each child is entered, and the number of children seen in each standard is recorded."

The systematic application of physical observation to large masses of school-children is no doubt capable of shedding much light upon educational problems which have hitherto been regarded too exclusively from the psychological standpoint. To Dr. Warner and his colleagues is therefore due much credit for the conscientious labour expended on the inquiry; and it is a matter for congratulation that the medical inspection of elementary schools recently established by law now affords opportunity of extending similar observations. It has long been the practice in dealing with imbecile children to note in the Institution Case-books the physical as well as mental abnormalities of each case. Séguin, indeed, more than fifty years ago drew attention to the co-relation of such abnormalities, and in 1883 Dr. Shuttleworth published in the *Liverpool Medico-Chirurgical Journal*, a paper on "The Physical Features of Idiocy," tracing the characteristic physical abnormalities coincident with certain special types of mental defect. These consisted mainly of what are termed by Dr. Warner developmental defects, but which it must be remembered are for the most part congenital, and usually

* Recording Card subsequently used. See Report, p. 17.

of permanent significance. As regards the other conditions noted in the Report, it must be borne in mind that abnormal nerve signs, low nutrition and mental dulness may be of a more or less temporary character, and to a large extent influenced by surroundings, and consequently alterable by training. This consideration, whilst pointing to the utility from the practical standpoint of such observations, also discloses a source of possible fallacy. A class of children accustomed to physical drill will show fewer " nerve-signs " than a class not so exercised, but it would be wrong to conclude that the *intellectual* standard of the former is necessarily superior to that of the latter. So again " low nutrition " may be the result of ill-feeding, or it may be due to constitutional defect. In both cases there may be diminished intellectual activity; but the latter condition is of much more serious import than the former. " Mental dulness," as reported by the teacher, will be found to be a very varying quantity in proportion to the educational standard aimed at in the particular school, and also in view of the pupil's state of health at the particular period. The prudent medical examiner of children alleged to be defective will not allow himself to be swayed too much by any one class of observations, for it is only by comparing the signs of physical abnormality with those of mental defect, educational attainments being well ascertained and weighed in the balance with those of similarly placed normal children of corresponding age, that a right judgment can be arrived at.

A comprehensive statistical inquiry, conducted on different lines, was instituted by the Swiss Government in 1897, to determine the number of children of school age weak in mind (*faibles d'esprit*) either

in greater or less degree, those afflicted with physical infirmities, idiots, deaf-mutes, and blind; and finally those morally unfit for tuition in ordinary schools. This investigation, prompted by the Teachers' Associations of Switzerland, seems to have proceeded upon pedagogical rather than physiological lines, but it is remarkable that in the aggregate the results tally very closely with those obtained in England by a more purely physical method. Out of 490,252 children of school age in Switzerland, 7,667 were returned as more or less mentally feeble, which is equivalent to a percentage of 1·5. This does not include the other categories mentioned above, one of which comprises "idiots," of the number of whom, however, we have not exact information. Altogether 13,155 children were returned as suffering from some degree of mental, physical, or moral infirmity. Of the 7,667 children returned as feeble-minded, it is stated that 567 already receive instruction in special classes, that 411 are in special establishments, that 104 are in orphanages or similar institutions, and do not require special treatment; whilst for 5,585 is demanded individual care in a special class or special institution, leaving 534 for whom this is not deemed necessary, and 466 in which no opinion is given.* In March, 1907, there were recorded 29 resident institutions for feeble-minded children (*Geistes-schwache*), public and private, in Switzerland,† with 1,172 inmates, besides 67 special classes with 1,415 pupils and (in addition) 623 children specially instructed.

* "Resultats du Dénombrement des Enfants faibles d'Esprit en Âge de fréquenter l'École" (1re partie). *Statistique de la Suisse*, 114e livraison, Berne, 1897.

† *Verhandlungen der VI. Schweiz. Konferenz für das Idiotenwesen*, p. 32.

CHAPTER III

DEFECTIVE AND EPILEPTIC CHILDREN

PUBLIC attention having been called, largely through the non-official investigations referred to in the previous chapter, to the existence in this country of a considerable class of children incapable of receiving education on conventional lines, the Lord President of Council (as chief of the Education Department) appointed in December, 1896, a Departmental Committee for the purpose of inquiring into the existing systems for the education of feeble-minded and defective children, "not idiots or imbeciles." The reference required them to report "upon the best practical means for discriminating on the one hand between the educable and non-educable classes of feeble-minded and defective children, and, on the other hand, between those children who may properly be taught in ordinary elementary schools by ordinary methods and those who should be taught in special schools," and also "to inquire and report as to the provision of suitable elementary education for epileptic children, and to advise as to any changes that may be desirable." The Committee consisted of the Rev. T. W. Sharpe, C.B., then Her Majesty's Senior Chief Inspector of Schools; of Messrs. Pooley and Newton, of the Education Department; of Mrs. Burgwin and Miss Douglas Townsend; and of Prof. Wm. Smith and Dr. Shuttleworth; Mr. H. W. Orange acting as Secretary.

The Committee obtained information about the Darenth Schools for Imbecile Children, and the other English Institutions for idiots and imbeciles, and also with regard to the treatment of epileptics at the Maghull Institution. They personally inspected the special classes in Leicester, London, Bradford, Brighton, and Bristol. In consequence of their Report, an Act of Parliament, known as the "Elementary Education (Defective and Epileptic Children) Act, 1899," received the Royal Assent in August, 1899. This Act, which is permissive only, enables school authorities to obtain grants from public money towards the education of defective and epileptic children, subject to "such conditions as may be directed by or in pursuance of the minutes of the Education Department in force for the time being."

Under the Regulations issued in 1907, children are not admitted to the special classes till five years of age, but the period of education for such children is extended until the age of sixteen years, and provisions are made for boarding out, when necessary, either in families or in certified schools, and for the school authority supplying, in cases requiring them, guides or conveyance. No requirement is made in the Act of 1899 as to the appointment of Medical Officers either by school authorities or the Education Department, but it is enacted that to bring a child within the purview of the Act "a certificate by a duly qualified practitioner, approved by the Education Department, shall be required in each case." The Education Act of 1907 has, however, since laid an obligation on all school authorities to "provide for the medical inspection of children immediately before, or at the time of, or as soon as possible after, their admission to a public elementary school."

Parents may demand the examination of children with a view to their admission to special classes, and re-examination with a view to their transfer to ordinary classes in public elementary schools. The original limitation of resident schools to four buildings, each building to contain not more than fifteen children, has been modified by the Elementary Education (Defective and Epileptic Children) Amendment Act, 1903, the only restriction now being that the school must obtain the approval of the Board of Education.

The Departmental Committee approximately estimated the number of " feeble-minded " children at 1 per cent. of the school population, an estimate which has been shown by the investigations of the more recent Royal Commission on the Care and Control of the Feeble-minded to be fairly near the mark when the whole country is considered. This later Commission appointed medical investigators to conduct inquiries in nine selected areas, each with a total population of not less than 150,000. Their Reports showed that " the northerly districts of the Durham County and Hull stand best," and " the large urban areas come last." Thus, in a mining district in Durham County the proportion of mentally defective children to the total registered school population was 0·28, and in Hull and Sculcoates 0·40. The rural areas show a higher percentage, the figures being wonderfully uniform, with the exception of the Lincolnshire Unions, which, though rural, stand with the urban districts. Thus in Wiltshire the figure was 0·47, in Somerset 0·58, and in Nottinghamshire (partly rural) 0·60. With these rural areas stands Stoke-on-Trent, where the medical investigator, Dr. Potts, reported well of the school population, in spite of

many drawbacks. In Lincolnshire the figure was 1·10, leading up to the higher figures of 1·12 and 1·24 in Birmingham and Manchester respectively.

Epileptic Children.—The Departmental Committee estimated the number of epileptic children at 1 per 1,000, of whom one-sixth might be classed as severely afflicted. They recommended that epileptic children of normal intellect should be left in ordinary schools if the fits are not frequent or violent fits do not occur in school, and that teachers be provided with instructions as to the treatment of children known to be epileptic. Feeble-minded epileptics may be received into special classes when the epilepsy is not severe; and for such cases it may be necessary to provide guides or conveyance between the home and the school. With regard to severe cases, whether mentally feeble or otherwise, treatment in residential homes seems essential, proper classification being provided. Each house of residence should consist of one floor only, and should not contain more than twenty inmates; but there may be an aggregation of such homes round an educational centre, as in the colony plan. It was recommended that school authorities should have power both to provide homes and to contribute to voluntary homes which conform to the conditions laid down.

The result of these recommendations was that the Act of 1899 gave power to school authorities to establish residential schools for epileptics. It did not, however, give power to board out or to establish special day-schools for epileptics. For epileptics the Board of Education certify boarding-schools only.

There is no question that good has resulted from the Defective and Epileptic Children Act of 1899; it is equally clear that it is by no means a solution of

the problem of the feeble-minded. Good has been effected by showing what the numbers of feeble-minded children are in our big towns, and by drawing public attention to them ; experience has been gained as to the best methods of educating defectives ; many have been kept out of mischief and under control in school, while without special schools they would, as a rule, have been loose on the streets, a constant anxiety to their parents, and a danger to the public. Some—only a small proportion, it is true—have been so trained and developed that they have become self-supporting, while a considerable number have been educated up to the point of contributing materially to their own support, a result which in most instances would not otherwise have been obtained. At the Conference of After-care Committees held in Bristol on October 22, 1908, a paper was read by Sir William Chance, Chairman of the National Association for the Feeble-minded, dealing with the Reports of the After-care Committees of Birmingham, Bristol, Leicester, Liverpool, London, Northampton, Nottingham, Oldham, and Plymouth. The combined statistics from the nine centres showed that 22 per cent. of those who had attended special schools for the mentally defective were in regular work, and 6·8 per cent. had irregular work.

Among the drawbacks attending the Act may be mentioned the fact that no legislative action was taken on the Committee's suggestion that the certificate excluding a child from a special class on account of imbecility should admit such child to an institution for imbecile children, and the fact that no provision was made for " after-care " on leaving school. This latter omission has done much to render nugatory the good effected by special classes, even

if it has not done worse. In the opinion of some, education for a few years, without subsequent control, is a dangerous experiment, increasing as it does the capacity, and in the case of some girls the attractiveness, of ill-balanced and regulated natures, who ought to be always under supervision. To illustrate the necessity for continuous supervision, and the futility of temporary care, we cannot do better than quote the records of the Birmingham After-care Committee, as embodied in their Report for 1908, after seven years' work. It was found that, "out of 308 feeble-minded persons who have left school and are still alive, only 19·8 per cent. are earning wages at all, and only 3·9 per cent. are earning as much as 10s. per week." The great disadvantage, however, of the 1899 Act is that it is merely permissive. As a consequence, comparatively few education authorities have established special schools. According to the Report of the Royal Commission on the Care and Control of the Feeble-minded, which we are going to discuss immediately, "taking England and Wales as a whole, the schools are few in number, and very unevenly distributed." "Special Council schools have been established wholly in urban centres, and usually where there is a large industrial population and a high assessable value." Up to August 1, 1907, accommodation in special schools had been provided for 9,082 children, but no less than 4,986 of these were in London. Yet the Commission estimated that there are 35,662 children in England and Wales who need provision.

A somewhat similar ineffectiveness attaches to the Released Persons (Poor Law Relief) Act, 1907, which enacts that feeble-minded prisoners may, after they have served their sentence, be committed by the

Governor of the prison to the workhouse, on condition that they are willing to be sent to that institution. We have known more than one instance in which attempts to make use of this provision failed, owing to the refusal of the youths concerned to go to the workhouse.

As all investigations demonstrated more and more clearly that the feeble-minded constituted a large and important section of the community, while increasing experience showed that such temporary expedients as special schools were quite insufficient means of dealing with a class most of whom require care during the greater part, if not the whole, of their lives, a Royal Commission was appointed, in September, 1904, to investigate the whole problem of the feeble-minded. The reference required them " to consider the existing methods of dealing with idiots and epileptics, and with imbecile, feeble-minded, or defective persons not certified under the Lunacy Laws ; and in view of the hardship or danger resulting to such persons and the community from insufficient provision for their care, training, and control, to report as to the amendments in the law and other measures which should be adopted in the matter, due regard being had to the expense involved in any such proposals and to the best means of securing economy therein." The original reference was extended in November, 1906, " to inquire into the constitution, jurisdiction, and working of the Commission in Lunacy and of other Lunacy Authorities in England and Wales, and into the expediency of amending the same, or adopting some other system of supervising the care of lunatics and mental defectives ; and to report as to any amendments in the law which should, in their opinion, be adopted."

The Commission consisted originally of the Marquis of Bath, Chairman ; W. P. Byrne, C.B., of the Home Office ; C. E. H. Hobhouse ; Dr. Needham, one of the Commissioners in Lunacy ; H. D. Greene, K.C. ; C. E. H. Chadwyck-Healey, K.C. ; the Rev. H. N. Burden, Manager of Certified Inebriate Reformatories; W. H. Dickinson, at that time Chairman of the National Association for Promoting the Welfare of the Feeble-minded ; C. S. Loch, Secretary of the Charity Organisation Society ; and Mrs. Hume Pinsent, Chairman of the Birmingham Special Schools Committee. Subsequently Dr. Donkin, one of H.M. Prison Commissioners, and Dr. J. C. Dunlop, Superintendent of Statistics in the Office of the Registrar-General for Scotland, were added to the Commission ; and in February, 1905, the Marquis of Bath having resigned, Lord Radnor was appointed Chairman.

The Commission commenced hearing evidence on November 14, 1904, and published its Report on July 31, 1908. The 248 witnesses examined included inspectors and medical officers of special schools, reformatories, prisons, lunatic and idiot asylums, and inebriate homes, and, indeed, " representatives of all classes of persons who could give information on the subject of inquiry." " Full particulars " were also obtained " of the manner in which foreign countries and the colonies are dealing with the questions submitted in the original reference." Visits were paid to " various institutions in which provision is made for the classes of persons named in the reference in England and Wales, Scotland and Ireland, and on the Continent." In addition, five members visited the United States of America, and issued a special Report of the observations made there. Almost at the outset of the inquiry it was

found that " there were no available statistics from which any trustworthy estimate could be made as to the number of persons who might be said to fall within one or other of the categories named in our reference. We decided, therefore, that an expert investigation of the question was indispensable, and having obtained the authority of the Treasury for the expenditure, which was necessarily considerable, we appointed medical investigators to make a thorough inquiry in regard to the number of mentally defective persons (including epileptics) in sixteen separate typical districts, both urban and rural, in England and Wales, Scotland and Ireland, in the hope that, from the particulars thus ascertained, we might be able to form at least a rough estimate of the whole number, and of the provision that it would be necessary to make for their proper treatment." These personal inquiries by medical experts constituted as important a part as any of the work of the Commission, and gave their conclusions and recommendations a precision and authority which could have been obtained in no other way.

The Commissioners published their Report and evidence in eight Blue-Books, of which the first three contain the evidence on the original reference, and the fourth that on the extended reference. The fifth volume consists of appendix papers ; the sixth contains the reports of the medical investigators ; the seventh the report on the visit of certain Commissioners to America ; while the eighth contains the Commissioners' own Reports and Recommendations.

At the commencement of the Report are two paragraphs, which describe in such clear and telling language the present unsatisfactory state of affairs that we cannot forbear from quoting them.

" Of the gravity of the present state of things there is no doubt. The mass of facts that we have collected, the statements of our witnesses, and our own personal visits and investigations, compel the conclusion that there are numbers of mentally defective persons whose training is neglected, over whom no sufficient control is exercised, and whose wayward and irresponsible lives are productive of crime and misery, of much injury and mischief to themselves and to others, and of much continuous expenditure wasteful to the community and to individual families.

" We find a local and ' permissive ' system of public education which is available here and there for a limited section of mentally defective children, and which, even if it be useful during the years of training, is supplemented by no subsequent supervision and control, and is in consequence often misdirected and unserviceable. We find large numbers of persons who are committed to prisons for repeated offences, which, being the manifestations of a permanent defect of mind, there is no hope of repressing, much less of stopping, by short punitive sentences. We find lunatic asylums crowded with patients who do not require the careful hospital treatment that well-equipped asylums now afford, and who might be treated in many other ways more economically, and as efficiently. We find, also, at large in the population many mentally defective persons, adults, young persons, and children, who are, some in one way, some in another, incapable of self-control, and who are therefore exposed to constant moral danger themselves, and become the source of lasting injury to the community."

In order to explain the recommendations for

mentally deficient children, it is necessary to state briefly the gist of the Commission's proposals.

The suggestion is that the Lunacy Commissioners for England and Wales should be replaced by a larger body, with extended powers and a wider purview, to be called "The Board of Control," which shall be responsible for the proper care of all mentally defective persons. This single central authority would supervise local administration. The Local Authority, in the opinion of the Commission, should be the Council of each County and County Borough, and they should be required by Statute to make suitable and sufficient provision for the mentally defective. It is further suggested that they should exercise the powers which it is proposed to confer on them through a Statutory Committee, which should be called the "Committee for the Care of the Mentally Defective," and should take over the duties of the Visiting Committee, or as it is sometimes called, the Asylums Committee, of the County Council. It would be the duty of this Committee to ascertain as far as possible the number of mentally defective persons for whom the Council is liable to provide, and with a view to this end it would be a statutory duty imposed on all Public Authorities to notify to the Committee all cases coming to their knowledge in the course of duty.

It is proposed to abolish the word "lunatic," and to use the term "mentally defective," and to include in this the whole group of cases within the scope of the Commission's investigation, "whether at the present time they can or cannot be certified under the Lunacy and Idiots Acts." The word "hospital" is also suggested instead of "asylum."

One of the chief principles adopted by the Com-

mission is that " persons who cannot take a part in the struggle of life, owing to mental defect, whether they are described as lunatics, or persons of unsound mind, idiots, imbeciles, feeble-minded, or otherwise, should be afforded by the State such special protection as may be suited to their needs." Another principle is " that the mental condition of these persons, and neither their poverty nor their crime, is the real ground of their claim for help from the State." The Commissioners also adopt the principle " that the protection of the mentally defective person, whatever form it takes, should be continued so long as it is necessary for his good."

Nine different classes are defined of persons needing care and control. They are as follows:

1. **Persons of unsound mind.**
2. **Persons mentally infirm.**
3. **Idiots.**
4. **Imbeciles.**
5. **Feeble-minded.**
6. **Moral Imbeciles.**
7. **Mentally defective Epileptics.**
8. **Mentally defective Inebriates.**
9. **Mentally defective Deaf and Dumb or Blind Persons.**

" To increase the resources at the disposal of local authorities for dealing with cases of mental defect, and for reducing the pressure upon asylums," the Commission recommend " the erection of intermediate hospitals, the institution of large farm colonies, as in America; the general establishment of observation and reception wards, and the use and notification of private homes for the treatment of 'unconfirmed cases.' They propose also the adop-

tion of family care and guardianship, either on the plan of the family colony in force on the Continent, or on the plan of ' boarding-out ' in force in Scotland, organised in connection with the local authorities for the care of the mentally defective, and under the inspection of the central authority."

If the recommendations of the Commission are adopted, the care and training of mentally defective children will pass out of the hands of the Education Committees into those of the " Committees for the Care of the Mentally Defective," acting under the " Board of Control." The advantages claimed for this are twofold. In the first place, all the mentally defective will be educated by the same authority, instead of (as now) by the Education Committee, under certain circumstances, or by the Poor Law authorities when there is poverty and destitution ; while, in the second place, they will have continuous control. At present the mentally defective are perpetually coming into contact with different local authorities, and are permanently cared for by none. Under the new arrangement all the mentally defective capable of benefiting by training will have a chance. The Central Authority will take note of and bring under such training as is possible even cases of low grade of mental defect, and thus follow the brilliant example set by some of the older institutions in this country and America.

So far the permissive character of the Elementary Education (Defective and Epileptic Children) Act of 1899 has rendered it to a great extent inoperative. It is therefore recommended to repeal the sections of the Elementary Education (Defective and Epileptic Children) Act which concern mentally defective children or " epileptic children so afflicted by

severe epilepsy as to be unfit to attend ordinary Public Elementary Schools," and to impose a statutory obligation on each County and County Borough Council, acting through its Committee for the Care of the Mentally Defective, to provide manual, industrial, and other training for mentally defective children. It is also recommended (and this would be a new power as far as the mentally defective are concerned, although already in force with regard to blind and deaf children) that, if the Committee decide that a child's education should be carried on in a residential home or institution, it shall be the parents' duty to cause the child to reside in that institution. It will be the duty of "the Local Education Authorities to place at the disposal of the Medical Officer of the Committee the register and roll of children who are of age to attend school, and notify to him any cases of children of that age who are thought to be mentally defective."

Special provision is suggested for cases where it is doubtful whether a child is merely dull and backward or is actually mentally defective, and when a period of continuous observation is necessary to decide this point, such cases may be received for a period of probation in special classes, schools, institutions, or homes for the mentally defective. While on probation they will be paid for by the Committee for the Care of the Mentally Defective, and will be frequently and periodically examined.

The question of what is to happen to the special schools already established by Education Committees when the mentally defective pass out of their care and into that of the Committee for the Care of the Mentally Defective is fully discussed. It is recommended that in such case the School Authority shall

be under statutory obligation, " if the Committee so desire, to transfer such schools to the Committee at a price to be agreed upon, or, failing that, by arbitration, or to contract with the Committee for the education of mentally defective children in these schools, and to carry on the schools in order to fulfil the terms of the contract made with them."

Whichever of these two courses is chosen by the Committee for the Care of the Mentally Defective, such schools would subsequently be under the supervision and inspection of the Board of Control, and would pass entirely out of the hands of the Board of Education.

In order that the Statutory Committees may be able to carry out satisfactorily the duties imposed on them, the Commission recommends, subject to certain safeguards, that, in cases not under suitable parental or other control, the Committee may resolve that, until the child reaches the age of twenty-one, all the rights and powers of a parent shall vest in the Committee. At the same time, in order not to lose sight of the numerous mentally defective children who are at the present time " under suitable parental or other control, or are not cruelly treated or otherwise neglected," but who may at any time, by the loss of a parent or change in circumstances of the family, become in need of help from the Committee, it is suggested that " the Committee endeavour to make a voluntary agreement with the parent or guardian for the appointment of a Friendly Visitor, who, with the Committee, shall be consulted as to any proposed removal of the person from his or her present residence, or any change in regard to his or her education and training, or any question of marriage, and generally in regard to any matter that may affect the well-being of the person at the time

or in the future." As no obligation is to be laid on medical practitioners, unless they are medical officers of certain public authorities, to report cases of mental defect other than those of " unsound mind "—which is the general equivalent of the word " lunatic " —it follows that the above recommendation does not necessarily apply to children who can always be properly controlled and provided for by their relatives, unless their mental defects take the special form of " unsoundness of mind " or " lunacy." In cases, however, where it is desirable to place a " mentally defective child," other than one of " unsound mind," in an institution or special home, an arrangement is proposed whereby this can readily be effected without undue publicity. The recommendation is that the precedent of the Idiots Act, 1886, should be followed, so that on the application of a parent or guardian, and with a certificate from one medical man, without the intervention of a judicial authority, a child can be placed in a registered establishment. That child will then be under the supervision of the Board of Control, and, with their consent, may be retained after reaching twenty-one years of age. It is further recommended that " anyone who for profit shall receive to reside as a patient or maintain any person appearing to come within any of the classes of mentally defective persons " set out in the nine categories on p. 29, " shall within seven days thereafter notify the same to the Board of Control," and that all institutions and houses for the care and maintenance of mental defectives be licensed, registered, supervised, and inspected by that Board.

Important recommendations are made for the treatment of criminal mentally-defective persons, with a view to avoiding the present system of re-

peated short sentences with dangerous intervals of liberty. It is suggested that mentally defective persons accused or convicted of crime may be handed over by the court to the Committee for the Care of the Mentally Defective, and may be retained and maintained by them in any suitable institution. To insure cases not being overlooked, it is recommended " that in cases of apparent mental defect or recurrent short sentences which are brought before the courts, the police should be under statutory obligation to apply to the Board of Control and to the Committee for the Care of the Mentally Defective for any information they may have with regard to the person charged, and to lay the same before the court."

The recommendations of the Commission for Scotland, and also for Ireland, are practically the same as those made for England and Wales. It is interesting to note that the Commission, while expressing strong approval of many developments of the administration of lunacy in Scotland, such as boarding-out, especially state that the care of the imbecile and feeble-minded requires further attention.

In Ireland the Commission found serious mental deterioration, but as the figures exemplifying this refer to the insane, they are not recorded here.

CHAPTER IV

SPECIAL INSTRUCTION

FROM the preceding chapters it will be seen that considerable attention has been given in England of late years to the class of defective children who may be called subnormal rather than imbecile or idiotic. According to the definitions recommended by the Royal Commission on the Care and Control of the Feeble-minded, such children are classified as "feeble-minded"—that is, "persons who may be capable of earning a living under favourable circumstances, but are incapable from mental defect existing from birth or from an early age—(*a*) of competing on equal terms with their normal fellows; or (*b*) of managing themselves and their affairs with ordinary prudence." It is open to question whether they might not with advantage be called "mentally feeble," rather than "feeble-minded," in order to avoid the ambiguity due to the comprehensive use of the latter term in America. Were the proposals of the Royal Commission to be carried into effect, England would at once stand ahead of all other countries in its treatment of this class. It must, however, be admitted that German and Scandinavian countries have been in advance of us in organising practical arrangements for their training. So far back as 1863 there seems to have been established at Halle an auxiliary class (Hilfsklasse) for pupils found incapable of following

the ordinary elementary school curriculum; and in 1867 a similar class was established at Dresden. Leipsic and Brunswick followed; and gradually auxiliary schools (Hilfschülen) grew out of the classes. Herr Kielhorn, well known as the director of the Brunswick auxiliary school (established in 1881), gave an account in 1894 of 32 auxiliary schools, consisting of 110 classes, with a teaching staff of 115, established in various parts of Germany. Herr Wintermann,* of Bremen, was able to supplement this statement in 1898 by the information that at that date auxiliary schools existed in 52 German towns, consisting of 202 classes, and containing 4,281 children (2,400 boys, 1,881 girls) under instruction by 225 teachers. So rapid was the development that at the end of 1905 Fräulein Dora Weinrich, of the Centrale für Private Fürsorge, Frankfort-on-Main, in her paper at the After-care Conference at Nottingham, said there were 230 special schools with 15,000 pupils, and that the aim was to have at least one in every town of 15,000 inhabitants. It is claimed that many children considered hopeless in the ordinary schools have been enabled by the special instruction given them to follow useful practical careers; and the large extension of the auxiliary schools above noted is, in a practical country like Germany, perhaps the best testimony to their success.

In the Scandinavian countries also, in addition to the boarding establishments for imbeciles previously referred to, day classes for the instruction of "abnormal children" have for more than thirty years been established. In Christiania and in Bergen they were started under the direction respectively of Herr

* *Berichten über den ersten Verbandstag der Hülfschulen Deutschlands*, 1898.

Karl Lippestad and of Herr Soethre, both experienced in the methods used at the neighbouring imbecile institutions. In addition, separate classes for merely backward (not necessarily defective) children are organised in connection with two of the largest elementary schools in Bergen. In Denmark various grades of defectives are received either in day classes or in residential institutions, as may be necessary, in the chain of establishments organised and supervised by Dr. Keller, which have now been adopted by the State. The arrangements for the instruction of teachable cases are very complete, and the ratio of teachers to taught liberal, the classes usually consisting of not more than eight or ten pupils. Stress is laid upon physical and manual exercises, and the pupils not fit to return home after school training are drafted to working institutions, of which there are several grades. Farm work and other occupations, such as brush, broom, and basket making, are followed by the older boys. The older girls are employed in dairy and laundry work, as well as in a variety of home industries, such as weaving cloth for dresses, curtain material, etc. For some, situations in domestic and dairy service are found, and it is said of the girls, whose careers are carefully watched, that "very few turn out badly."

In Belgium special schools for the mentally defective have now been in existence for some years, and in Brussels, Antwerp, and Ghent there are also After-care Societies, which originated from the "Société Protectrice de l'Enfance Anormale." The movement in favour of "special schools" for subnormal children has also spread to Austria, to Switzerland, to France, and even to Spain. In Italy there exists a "National League for the Pro-

tection of Deficient Children," under the presidency of Signor Guido Baccelli, formerly Minister of Public Instruction, one of the first-fruits being the opening in Rome of a day-school. In America a great deal of important work has been done, and the section of the Commission on the Care and Control of the Feeble-minded who visited that country were favourably impressed by what they saw in some of the States, for it must be remembered that each State has its own regulations and institutions. Our Commissioners were struck by the excellent practical work they saw being done by the feeble-minded in some of the industrial colonies, and also by the economical character of the buildings and arrangements generally. In America are to be found several industrial colonies for permanent cases. These have been recognised as essential. The work in the special schools is regulated with this view, and to the continuous training and supervision is no doubt to be largely ascribed the excellent work done by some of the adult feeble-minded. Our Commissioners give a specially interesting account of what they saw at the Templeton Colony for Feeble-minded Males, ninety miles from Boston. The colonists "are all required to do manual work, and many of them do nearly the full work of a free labourer. We saw a group of four, with heavy sledges and hammers, breaking rock and drilling it for blasting with explosives. They were working steadily and without supervision. Farther on was another group of five men working in a field. They were bringing in stooks of corn, which they were loading upon a cart. Others in the shed were unloading and storing the corn. A further group was hauling brick in wheelbarrows. At a little distance there was a row of about a dozen, who,

under the supervision of one man only, were working a field with sharp pickaxes. An imbecile was ploughing with a pair of horses, his daily task. All of these men had come from Dr. Fernald's schools for the feeble-minded, and a large proportion of those who were busily and happily engaged in useful work could never be taught to read and write; some had not human speech. The previous training was, of course, essential; idiots and low-grade imbeciles could not be employed in this way without preliminary training."

In England priority in the actual opening of a Special Class belongs to Leicester, that having been started by the School Board in April, 1892. In the same year there were established in London "Schools for Special Instruction" of children who, by reason of physical or mental defects, could not be properly taught in the ordinary standards or by ordinary methods; and Mrs. Burgwin was appointed organising superintendent. Under her able direction upwards of eighty centres of special instruction for mentally defective children have up to the present time been established, chiefly in the poorer districts of the metropolis, and there were on March 31, 1908, more than 6,000 children on the roll—a number constantly increasing. The Board have wisely ordained that no more than twenty children be assigned to each teacher; and in practice the classes are even smaller than this. The ratio of pupils is, indeed, much larger than that which obtains in the Scandinavian schools, where one teacher is provided for every ten pupils; but the Superintendent utilises to the utmost the teaching force at her command by well-devised time-tables.* It may be remarked with

* See specimen Time-Table, pp. 202, 203.

regard to this that, though the ordinary school nomenclature of studies is retained (as in the case of the so-called "three R's"), much more than the ordinary instruction is included, sensorial and manual training and objective methods of demonstration being much resorted to. The "occupations," which form an important part of each day's work, are especially adapted to the varying capacities or incapacities of individual pupils; and the results, as evidenced at annual exhibitions of the products of manual training in the London Council Schools generally, are most encouraging, and in some cases surprising. It may be stated, indeed, that at these exhibitions the array of work by children in the special classes creditably holds its own, side by side with that of the normal children. During recent years a new departure has been made by the establishment of ten centres for "Elder Boys," in which instruction is specially given in manual arts by male teachers. A residential home for 32 mentally defective boys has also been opened. Twenty-eight day-schools have, in addition, been provided for physically defective children, with an attendance roll of about 2,400.

The selection of pupils for these classes is now made by medical officers appointed for the purpose in conjunction with the Superintendent of Special Instruction. The parents, and also the family doctor, may attend the examination; but we shall not discuss here the mode of procedure, as we have devoted a special chapter (Chapter VII.) to this subject.

The Report of the Royal Commission on the Care and Control of the Feeble-minded contains an account of 137 Special Council Schools for Defective and Epileptic Children, 79 of these being in London,

and states that " these figures show that the Special Council Schools have been established wholly in urban centres, and usually where there is a large industrial population, and a high assessable value. They show, also, that, taking England and Wales as a whole, the schools are few in number and very unevenly distributed." The same Report states that the evidence derived from the Reports of the Medical Investigators in regard to Mentally Defective Children " supports strongly the view that permissive legislation has failed, and that some public organisation should at an early date be established to deal with these cases in a systematic manner." The Commission estimates the number of children in England and Wales needing provision at 35,662. Scarcely a quarter of these are being dealt with at the present time.

There is, unfortunately, sometimes prejudice in the minds of parents against the attendance of their children at the special schools, as stamping them with inferiority. The Act of 1899 recognises parental rights in Sub-section 5 of Section 2, which compels school authorities to " make provision for the examination from time to time of any child dealt with under this section, in order to ascertain whether such child has attained such a mental and physical condition as to be fit to attend the ordinary classes of public elementary schools," and, if the parent so request, this re-examination must be made at intervals of not less than six months.

The London Education Committee and some other Education Committees have already made provision for the periodical examination by the medical officers of all children attending the special classes. On their report, which is, of course, based to a large

extent on information as to progress furnished by the "special" teachers, improved cases are sent back to the ordinary elementary schools. Degenerating cases have from time to time to be excluded as imbeciles; and, in such cases, it would seem very desirable that some easier way should be devised for admission into rate-supported institutions than is at present provided by the Poor Law. The imbecile rejected by the special school has practically to pass through the procedure prescribed for the pauper lunatic before he gains admission to an institution like Darenth; and parents are thus deterred from placing their unfortunate offspring in a place of safety.

There are a few educational homes in which are received children of the better social class who are so far deficient or irregular in mental development as to require special modes of education; and as in many cases the mental deficiency or irregularity is intimately connected with physical abnormality, skilled medical supervision of such education is an advantage. It is obvious that a child whose mental deficiency or nervous peculiarity is but slight will have a better chance of improvement when educated with those of similar mental calibre than if subjected to hopeless competition with normal children at an ordinary school, or, on the other hand, exposed to the depressing influences of an institution where idiots are received.

In addition to special arrangements organised by Education Committees, certain philanthropic agencies have, since 1890, established industrial homes in various parts of the country for the employment, under judicious supervision, of feeble-minded adolescents, and also in a few instances for the

training of younger children for whom a boarding-school is essential, either on account of specially immoral, vicious, or truant tendencies, or because they come from very bad homes. In 1896 the National Association for Promoting the Welfare of the Feeble-minded was formed, with the object of co-ordinating the scattered efforts that had already been made, and arousing a larger share of public interest in the necessities of the case. It has under its immediate control in the neighbourhood of the metropolis three homes, two for girls beyond school age, and a home for feeble-minded mothers and their children, and has recently purchased land for a permanent Industrial Colony in Kent, where 24 lads are at present resident.

In May, 1902, the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded opened a boarding-school for boys at Sandlebridge, near Manchester, under the management of Miss Mary Dendy, and in September of the same year a home for girls. In the first instance, 12 boys were admitted and 8 girls; in April, 1909, there were 105 boys under care—92 of them being under sixteen, and 13 over sixteen years of age—and 78 girls, of whom 61 were under and 17 over sixteen, the ages varying from five to twenty. Children are not admitted over thirteen, and, as far as possible, they are kept for life. Twenty boys work on the farm and garden, and a similar number of girls are employed in the laundry and the various houses.

In May, 1907, the Sandwell Hall Boarding-school for the Feeble-minded was opened near Birmingham by the generosity of the Rev. W. H. Burden, one of the members of the Royal Commission on the Care and Control of the Feeble-minded. Sandwell Hall was

formerly the family seat of the Earls of Dartmouth, and stands in the midst of a spacious park a few miles north of Birmingham. In this institution special arrangements have been made for training in practical work, gardening, carpentry, boot-making, brush-making, laundry work, carpet-weaving, and tailoring. This institution soon received its full complement of 200, and the long waiting-list of boys and girls who have been accepted by the Case Selection Committee testifies to the utterly inadequate accommodation in this country at the present time. As at Sandlebridge, it is hoped that, whenever possible, cases will be retained for permanent care. With this object a certain number will probably be drafted on to the new institution which Mr. Burden has recently established at Stoke Park, near Bristol.

In May, 1908, the three Boards of Guardians responsible for the city of Birmingham—namely, the Aston, Birmingham, and King's Norton Boards—opened the Monyhull Colony near Birmingham for Epileptic and Feeble-minded Persons. This institution, which has accommodation for 210 inmates over sixteen years of age, is the first institution established by Guardians for uncertified cases, and represents the first combination of Boards of Guardians to deal with these cases in a manner none of them could have undertaken singly.

Altogether there are now in England upwards of thirty homes of this class, particulars of which will be found in an appendix. The number provided, however, is still quite inadequate to accommodate the cases requiring provision. Practically all such institutions have a long waiting-list.

A few illustrative cases, giving an idea of the class of children to whom the designation of "feeble-minded" or "mentally feeble" may appropriately be applied, may help to elucidate the subject. Such children are also described as "backward," or of "retarded mental development"—terms corresponding to the "Enfants arriérés" of French writers, the "geistig-Zurückgebliebene" of the Germans, and the "Tardivi" of the Italians.

Private Cases.

Case I.—A child of highly intellectual parents is noted to be somewhat delicate in babyhood, but no suspicion of mental abnormality is entertained by his parents until, at two years of age, it is found he uses only a few monosyllabic words, and does not try to construct sentences for himself, though he can perfectly well repeat what is said to him. He frequently, indeed, repeats questions put to him instead of replying to them, thus showing that the defect is not one of hearing, but of understanding. Much care and patience is exercised by an intelligent mother, with the result that at four he speaks fairly well, though with thick utterance. Home education is carried on till he is seven years of age, but a brother two years younger is almost two years in advance of him in elementary studies. He is then sent to a kindergarten for morning lessons; he takes interest in the songs and in simple musical drill, does paper-folding, stick-laying, mat-weaving, and bead-threading in series of number and colour. His interest, however, soon flags, and he is apt to repeat the same question again and again, as if not attending to the answer. In calculation he makes but little progress, and with difficulty masters the simple rules of arithmetic. By dint of individual instruction, he attains, by the time he is ten years of age, the power of reading, though in a monotonous style, easy stories in a primer, writes copies in text-hand, and plays simple exercises

on the piano. There is, however, still a marked childishness of manner, a thick articulation and *staccato* utterance, and a tendency to repeat questions in a meaningless way. His bodily development has improved, and his only sensory defect is an error of refraction corrected by spectacles. Some twitching movement is noticeable in the muscles of the fingers, especially under excitement; but otherwise muscular control is fairly good. Under drill, regulated muscular exercise, manual training, and varied but brief school lessons, considerable improvement is proceeding, and he is a steady worker in garden, and good at Sloyd work. (He is now learning practical farming.)

CASE II.—A fairly well-grown, well-nourished girl of thirteen. Head 21 inches, forehead "bossy." Palate high and narrow. On extending hands, fingers assume a nervous pose, and there are occasional finger-twitches. Twitching also occurs about the corners of the mouth, and there is a tendency to frontal corrugation.

History.—Mother nervous and in ill-health during pregnancy. Child used to start up uneasily when infant, and from seven to eight had "night terrors." Now sleeps uneasily at times. Has never had fits. The habits have not always been clean, but are so now. Was carefully taught at home, and for a time sent to boarding-school, which, however, she had to leave in consequence of threatening of chorea. Can read from primer fairly. Writes from dictation shakily. Adds and subtracts imperfectly and with effort. Is fond of needlework. At times shows destructive tendencies. Under special instruction for three years has lost many of her nervous movements, with the aid of regulated drill. Has improved in reading and writing, but it is found unwise to press her in arithmetic, as this brings on twitching and restlessness at night. She has made considerable progress in a variety of manual work, including Sloyd and gardening, and does much useful sewing and fancy work. (Is reported to be useful at home.)

CASE III.—A bright-looking gentlemanly little boy of nine; parents had financial anxieties, which worried mother before his birth. As an infant showed weakness of back, and was long in learning to walk. Had whooping-cough when fourteen months old, and was worse after this, having occasional "falling attacks" (probably *petit mal*). Speech retarded, but now fairly good, and when not deterred by shyness, chatters volubly on a variety of subjects. The head circumference measured 19 inches; the frontal region tapering to a median ridge, the left side of head smaller than the right. The occipital region fairly well developed. There seems to be some slight want of power on right side of body, as compared with left, and he cannot hop on right leg. Hands, when held out, droop; and there are some twitching movements of fingers. He is thin, though his appetite is good and he is judiciously fed. Had attended a kindergarten class for two years, but had learned very little; could not count at all. For two years subsequently he was in an institution for imbeciles, where he made but little progress, and seemed very nervous when with children worse than himself. During the last year has had special instruction with a few other mentally feeble children, under medical supervision, and is now beginning to read, write, count, model in clay, and work usefully in the garden. His cranial circumference has increased 1½ inches during the last four years, and the forehead has developed notably. (Though much benefited by training, proved to require permanent care.)

The following are examples of cases presented for "Special Instruction" from London Council Schools:

NOTES ON ADMISSION.

CASE IV. (Microcephalic type).—F. D., aged seven years, seven months. Small for age, fairly nourished, well limbed. Senses perfect. Head small with narrow forehead, tapers towards vertex, circumference 19 inches. Palate high and narrow. Epicanthus. Mouth breather.

Hands well extended. Has attended infant school three years. Knows letters, and can form O, A, I, T. Cannot count correctly, and says that he has three eyes, a dog six legs, etc. Requires special instruction, but should have more manual than mental work, as he seems subject to headaches. Should be examined for adenoids.

CASE V. (Hydrocephalic type).—A. M., aged eight and a half. A feeble-looking boy with large globular head, measuring 21⅛ inches, and right internal squint. Had fits up to five years of age, and consequently did not attend infant school. Now free from fits, but unsteady in gait, and has finger twitches. No educational attainments, but answers questions with fair intelligence. Knows number and names of brothers and sisters, address of home, his own age, etc. Requires special instruction.

CASE VI. (Tubercular type).—E. M., aged ten. A pleasing-looking girl, with long dark eyelashes and nice hair. Head 20 inches. Has scars on neck from glandular abscesses, and minute corneal opacities from old phlyctenular inflammation. Has had hip-joint trouble, but no active symptoms now. Owing to delicacy has been irregular in school attendance, and is very backward for her age, being able to read only small words, to write her name, and to work simple addition sums. Requires extra care, physical and mental, and would benefit by special instruction for a period.

CASE VII. (Syphilitic taint).—M. O., aged twelve. A dull-looking girl with dusky complexion. Head 21 inches. Radiating lines around mouth. Teeth "peggy." Sight of right eye destroyed by interstitial keratitis, some opacity of left, but fair vision. Slightly deaf. Seems to have been almost stationary the last two years. Is excitable at times, but generally slow in reaction. Reads from primer in drawling way. Writes untidily. Can add and subtract a little. Unfit for ordinary standards, but may learn some manual work in special instruction class, but will probably retrograde.

CASE VIII. (Neurotic type).—K. R., a bright-looking

but restless girl of nine. Head 19¾ inches in circumference. Tendency to epicanthus. Palate deformed by alveolar hypertrophy. Hands extended in nervous *pose*, with semi-flexed wrists, and semi-bent fingers with difficulty kept still. Has been several years at school, but still in preparatory standard. Knows most of the letters and some small words, and guesses others; forms O, A, T, etc., but fails in writing simple words (*at*, *to*, etc.); adds units very much at random. Speaks hurriedly. Attention wandering. Requires special instruction.

The following have been under special instruction for a time:

CASE IX. (Paralytic type).—L. O., aged thirteen, three years in special school. Head 19¾ inches in circumference, palate saddle-shaped; some want of power of left side, with athetosis of left fingers. Articulation poor. No school attainments when admitted, but has learned to read small words, to write fairly well in the lines of a copy-book, and to add a little. Does good macramé, and is working well in the laundry class.

CASE X. (Mongoloid type).—P. W., a fairly grown girl of twelve, with obliquely-set eyes, rough and ruddy skin, tongue with shallow transverse fissures, and broad, short-fingered hand, and in-curved little fingers. After three years' special instruction has learned to read in second-standard book, to work addition and subtraction sums, and to write from dictation. She is also progressing at laundry and cookery classes. When admitted at age of nine, incapable of standard work in girls' school; now fit to join second standard.

CASE XI. (Sporadic cretin).—A. S., aged fourteen, admitted four years ago to special school, being unfit for ordinary school in consequence of physical and mental abnormalities characteristic of cretinism. During the last three years has had thyroid treatment at Children's Hospital, and has notably improved. From being an inert dwarf, with baggy cheeks and protuberant abdomen, he has become an active (somewhat mischievous) boy

of bright expression and slender figure, and has grown 8 inches (from 39½ to 47½) in last two years. Now knows the letters and figures; can write his name and add a little, having originally been absolutely incapable of educational attainment.

CASE XII. (Choreic type).—G. W., aged thirteen, three years in special school. When admitted, vacant in expression and school attainments almost *nil*. Twitches noticeable in extended fingers and about angles of mouth. Though his mental condition is still variable—dull at times and bright at others—has made considerable progress, and draws and paints in oil admirably.

CHAPTER V

PATHOLOGICAL CLASSIFICATION OF FORMS OF MENTAL DEFICIENCY

As was stated in the preface to the first edition, it is not intended in the present work to do more than glance at the pathological aspects of the subject. Those interested in these aspects will find in the well-known textbook by Ireland,* in the various volumes of "Recherches" by Bourneville,† in an article by Fletcher Beach, in Hack Tuke's‡ "Dictionary of Psychological Medicine," in the series of papers contributed by J. S. Bolton§ to the *Journal of Mental Science*, and in the recent textbook by Tredgold,‖ much that is valuable. The most important facts in pathology from the clinical point of view are those that will be serviceable in classifying cases. Before we describe these, however, a short account of the general pathology may be interesting. And first we remark that in connection with mental deficiency we find two main divisions of cerebral abnormality: (*a*) that arising from formative or developmental defect, and (*b*) that resulting from inflammatory or

* *Mental Affections of Children*, W. W. Ireland, 1898.

† *Recherches sur l'Epilepsie, l'Hystérie, et l'Idiotie*, Paris, 1890 *et seq.*

‡ See also article on "Idiocy and Imbecility" in Clifford Allbutt's *System of Medicine*, vol. viii.

§ "Amentia and Dementia," *Journal of Mental Science*, 1905 and 1906.

‖ *Mental Deficiency*, A. F. Tredgold, 1908.

degenerative processes. Each class of abnormality corresponds, of course, to the broad primary classification of cases of mental deficiency into (*a*) CONGENITAL, and (*b*) NON-CONGENITAL. In connection with a classification derived largely from the clinical side these well-understood terms are useful. From the pathological point of view, as suggested by Dr. Tredgold, the terms PRIMARY and SECONDARY, which are not quite synonymous with the above, might be preferred. **Primary Amentia** denotes mental defect due to an intrinsic cause; **Secondary Amentia,** that due to an extrinsic cause. Whichever classification we adopt, we must recognise also a mixed class of cases, in which the actual lesion supervenes upon a brain originally imperfect in development, and to such cases, occurring at a crisis of early life, has been given the name of DEVELOPMENTAL. The extent of the cerebral abnormality, whether original or acquired, may *a priori* be expected to bear some proportion to the degree of mental defect; and this is usually the case, though it is necessary to bear in mind that microscopical as well as macroscopical constitution of brain tissue must be taken into account, and that certain portions of the brain are of more importance (*quâ* intelligence) than others.

Recent microscopical investigations have yielded a rich harvest of facts. Cellular changes have been found in all regions of the brain in cases of mental defect. The prefrontal and, to a less extent, the parietal lobes are, however, the two situations in which they most frequently occur.* Dr. Bolton states that " the regions of under-development in cases of mental deficiency and of wasting in cases of dementia (or permanent psychic disability due to neuronic

* See also *Goulstonian Lectures*, R.C.P., by J. S. Bolton, February and March, 1910.

degeneration) were satisfactorily determined to have their chief focus in the prefrontal region." According to Dr. Tredgold, "As compared with the nerve cells of the healthy brain, those of the ament are characterised by the following conditions: (1) Numerical deficiency; (2) irregular arrangement; (3) imperfect development of individual cells."* He further states on the whole, "That the amount of change discoverable by the microscope is distinctly proportionate to the degree of mental deficiency present during life." Among other changes is especially noticeable a paucity of dendrons and gemmules, and very commonly pigmentation. The pyramidal layer of the cortex shows the most obvious abnormalities, and it is in its deeper layer that pigmentation is most frequently observed. At the same time there is often *sclerosis*, or overgrowth of neuroglia, usually in the form of localised patches. These are found chiefly in three situations: (1) The grey matter of the cerebral cortex; (2) the floor of the lateral ventricles; (3) the surface of the hemisphere under the pia, closely applied to the cortex. These histological changes are the essentials in mental defect, rather than the gross lesions we shall presently describe.

Localised signs of disease in an otherwise well-developed brain are, of course, suggestive of secondary amentia as distinguished from primary. In the absence of a reliable history, however, the distinction is difficult, and often impossible, especially as the dementia that frequently supervenes is characterised by histological signs that obscure the issue.

As regards macroscopic appearances, we find that frequently, and especially in the more extreme

* Tredgold, *Mental Deficiency*, p. 56.

cases of mental defect, there are quite definite changes visible to the naked eye. As Dr. Tredgold, however, reminds us, it is necessary to realise that such abnormalities as porencephaly and hydrocephalus, while more common in defectives, have existed in individuals whose mental condition was apparently normal.

As a rule, the brains of defectives weigh less than the normal. They may be peculiar in configuration, and the convolutions may be irregular or unusually simply arranged. There may be gross malformations of development connected with the fissures, basal ganglia, and other parts.

We must now, however, direct our attention to the changes that are useful in classification, and may say at once that of congenital abnormalities the most striking is **Microcephalus.** In its extreme form it is characteristic of a low type of idiocy, in which have been traced simian and even theroid resemblances. There are a series of gradations rising through idiocy and imbecility to simple " feeble-mindedness," which is not unfrequently associated with small-headedness. Microcephalus, however, does not depend solely upon diminutive size of head, as ascertained by measurement ; and in our opinion the limitation of the term proposed by some* to cases in which the cranial circumference does not exceed 17 inches is scarcely scientific. There is a characteristic form,† as well as size, of microcephalic heads ; such, for example, as a narrow, rapidly receding forehead, a somewhat pointed vertex, and a flat occiput. Though, of course, the frontal and parietal lobes are on a small scale, it is in the occipital and temporo-sphenoidal that we usually find the most striking evidence of

* Ireland, *op. cit.*, p. 89. † See Plate II., Fig. 1

PLATE II.

Fig. 1.

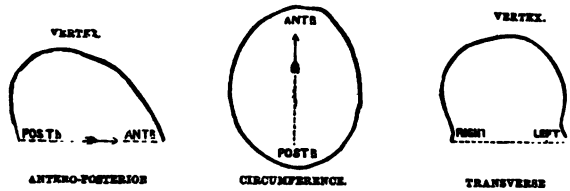


Fig. 2.

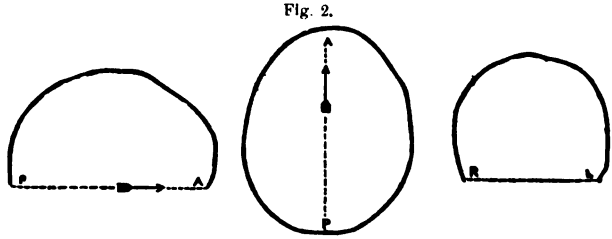
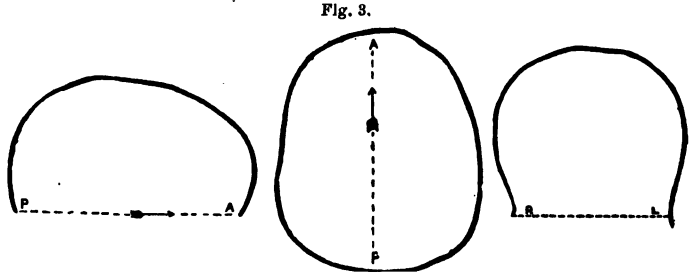


Fig. 3.



COMPARATIVE CRANIAL CONTOURS.

Fig. 1. Microcephalic Contours. Fig. 2. "Mongolian" Contours.
Fig. 3. Hydrocephalic Contours.

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PLATE III.

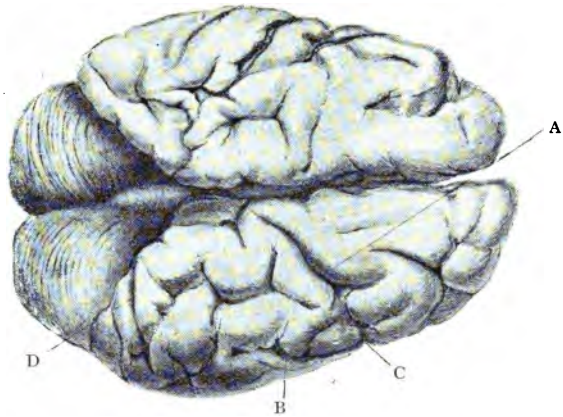

FIG. 1.—MICROCEPHALIC BRAIN (CONVEXITY).

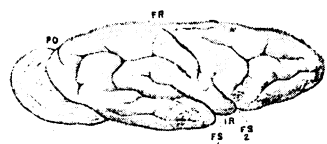

FIG. 2.—MICROCEPHALIC BRAIN (PROFILE).

FIG. 3.

FIG. 4.

DEFECT OF CEREBELLUM.

PLATE IV.

FIG. 1.—"FREDDY" (ROYAL ALBERT ASYLUM).

FIG. 2 (SPECIAL SCHOOL).

FIG. 3 (SPECIAL SCHOOL).

MICROCEPHALIC CASES.

To face Plate III. *Between pages 56 and 57.*

Mau

arrest in development. This is well shown in the case of a microcephalic girl of fifteen, formerly under the care of Dr. Shuttleworth at the Royal Albert Asylum, whose brain was fully described by him in the *Journal of Mental Science* for October, 1878. A view of the convexity of the brain, and a diagrammatic sketch of the convolutions is appended (Plate III., Figs. 1 and 2).* A still more remarkable case ("Freddy"), for twenty years under Dr. Shuttleworth's observation at Lancaster, was anatomically reviewed by Dr. Telford Smith and the late Professor Cunningham.† His brain, when recent, weighed only 12½ ounces; the convolutions were simple, though fairly distinguishable in the anterior lobes, but became rudimentary posteriorly, the occipital and temporo-sphenoidal lobes being, indeed, very imperfectly developed. This "Aztec"-like youth,‡ who had large bright eyes, an aquiline nose, and somewhat receding chin, manifested good powers of observation, but was only able to express himself in a few monosyllabic words. He had considerable will power, and though it was found impossible to train him to much that was useful, he was in no sense a low-grade idiot. We have repeatedly seen boys and girls with heads measuring only 19 inches taught

* DESCRIPTION OF PLATE III.—FIG. 1.—General view of Microcephalic Brain seen from above. A. Parieto-occipital fissure. B. Horizontal fissure. C. Ascending limb of Sylvian fissure. D. Fissure of Rolando.

FIG. 2.—Semi-diagrammatic view of Microcephalic Brain, showing general arrangement of convolutions (right side). F.R. Fissure of Rolando. P.O. Parieto-occipital fissure. F.S. Fissure of Sylvius: 1. Horizontal limb; 2. Ascending limb. I.R. Island of Reil.

† *Trans. Roy. Dublin Society*, vol. v., ser. 2, part viii.

‡ See Plate IV., Fig. 1.

to read and write, and to do industrial work. Quality of brain is an important factor, as well as quantity, and in cases of microcephalus what little there is, is usually fairly active. The condition of *infantilism*, which will shortly be described in connection with cretinism, is not infrequently, however, a prominent factor.

Defects of the corpus callosum and partial atrophies affecting only portions of the brain, are occasionally met with. We have already pointed out that such gross lesions, although more common in the mentally defective and epileptic, have been found in individuals who were believed to be normal. Such lesions, therefore, do not predicate mental defect unless they are associated with the histological changes already described, or involve an area essential to the normal intellectual or psychic processes. Among some remarkable abnormalities the following may be specially interesting. In the autopsy of a hemiplegic imbecile, who died at twenty-one years of age, a gap 4 inches in length was found extending from the anterior part of the right frontal lobe nearly to the occipital, leaving the orbital plate uncovered, and disclosing part of the cavity of the lateral sinus (see Plate V., Fig. 2). Internally, a narrow ridge, marked by convolutions, separated this gap from the longitudinal sinus; and between it and the temporo-sphenoidal lobe was seen standing out, quite uncovered by convolutions, part of the caudate nucleus. The brain weighed 32½ ounces. This defect was probably in the nature of an arrest of development, as there was no cicatricial tissue to be made out, and no descending sclerosis of the spinal cord. The mother gave an account of fright and injury in consequence of being knocked down by a

PLATE V.

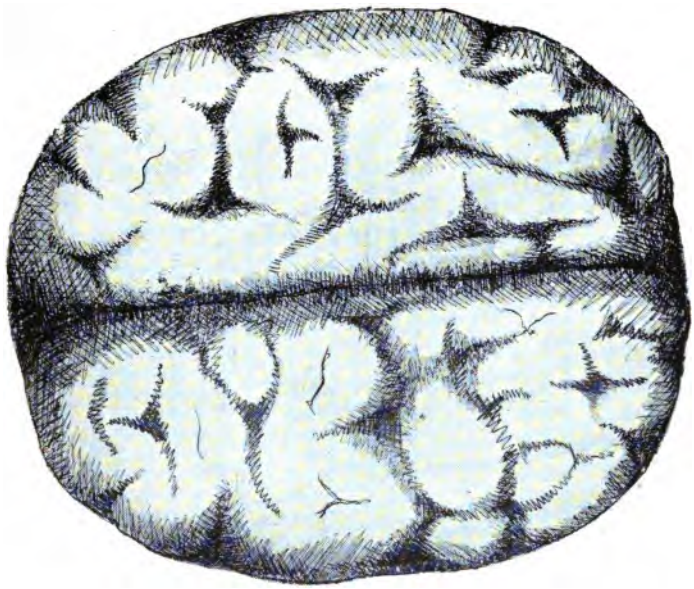

FIG. 1.—"MONGOL" BRAIN. (From Pen-and-Ink Sketch.)

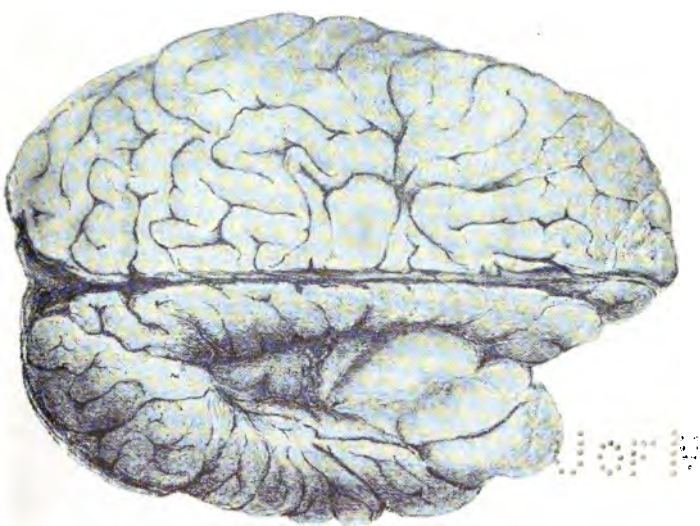

FIG. 2.—PORENCEPHALUS.

To face page 58.

NAGU

cow about the sixth month of pregnancy. The patient had his left arm and hand smaller than the right ; his senses were normal, his speech indistinct, but he was able to use ordinary sentences. He made himself very useful, and could clean shoes well.

A rare case of **atrophy of the cerebellum** was discovered at the autopsy of an imbecile girl of fifteen, who died at the Royal Albert Asylum of phthisis. As no marked ataxia or inco-ordination had been noticed during life, it was with some surprise that a merely rudimentary condition of the left lobe of the cerebellum was observed (see Plate III., Figs. 3 and 4). This was represented by a papilla no larger than the nail of one's little finger, and the vermiform process was a minute nodule obscurely marked with laminæ ; whilst the right lobe, which constituted the main portion of the cerebellum, was only half a square inch in superficial area, and only a quarter of an inch in thickness at its base. This lilliputian lobule had, however, the normal laminated appearance and structure. The pons was indicated by only a few transverse fibres. With the exception of the cerebellum and its peduncles, the rest of the encephalon (which weighed 42 ounces) and the cranial nerves appeared to be normal. In this case there was considerable feebleness of body as well as of mind, as the girl suffered from a protracted illness (phthisis), but the gait was by no means characteristic of cerebellar abnormality.

We may appropriately consider here the two interesting groups of cases spoken of as **word-blind** and **word-deaf,** which have recently been satisfactorily explained to be due to absence or imperfect development of an isolated portion of the brain. These conditions are not so very uncommon, occurring,

according to Dr. C. J. Thomas,* about once in every 2,000 children, and probably at least once in every twenty mentally defective children. It is somewhat surprising, therefore, that they have not received more attention in medical literature. Curiously enough, just as with the condition of oxycephaly to be presently described, the first accounts have been written by ophthalmic surgeons, and to Dr. Hinshelwood† in particular we are indebted for some interesting clinical cases. Dr. Kerr,‡ the medical officer to the London County Council Education Committee, and others have since described the condition, but it is to Dr. Thomas§ that we are indebted for the most complete account. Those who are specially interested will find his papers well worthy of study. The typical WORD-BLIND child is apparently intelligent, often clever at hand-work and drawing, with good powers of observation and reasoning; in calculation and manipulation of Arabic numerals he is at least equal to the normal. He is, however, quite unable to read even words of one syllable, and the most painstaking attempts to teach him reading are an absolute failure. Vision is normal. Although he cannot recognise words, yet if a word is spelt out to him he is often able to respond with the correct one. Occasionally he is able to arrive at the meanings of some words by spelling them aloud.

There are four cerebral centres involved in speech-production, of which the earliest to be developed in

* *Some Forms of Congenital Aphasia in their Educational Aspects*, 1905.

† *Lancet*, May 26, 1900; *Ophthalmic Review*, 1902.

‡ *Lancet*, 1900, i., p. 1446; *Report of Medical Officer of School Board for London*, 1904.

§ C. J. Thomas, *op. cit.*, *et The Aphasias of Childhood and Educational Hygiene*, London, 1908.

a child is that for storage of the meaning of words heard ; the next is that for motor excitation of speech, which is educated and stimulated by impulses from the auditory word-centre. There is a third centre for the storage of the meaning of word-symbols seen, and a fourth for writing. This centre for writing is educated and stimulated by impulses from the visual word-centre. It is " a congenital poverty of structural elements " of the visual word-centre, which is situated in the supramarginal and angular gyri of the left side, which results, as Dr. Thomas clearly demonstrates, in word-blindness, no other lesion accounting satisfactorily for a typical case.

A typical WORD-DEAF child does not appear to be as intelligent as one whose only defect is word-blindness, yet he is superior to the ordinary mental defective. He may be able to write from a copy, to draw well, and use his fingers ; his vision is normal, and he is not really deaf, for he can respond by raising his head to sounds of all kinds, even when faint. He can reproduce many words without understanding them, though the meaning of an occasional word may dawn upon him when his lips move to pronounce it. Some of these children keep their eyes on a speaker's lips, and recognise a few nouns by lip-reading. The only chance of training is to teach them to understand language by lip-reading or some method other than the storage of memories of words heard. This must be done at whatever cost of time and patience, because the understanding of language is a necessity for all human beings.

In the case of word-blind children much may sometimes be done to develop a kinæsthetic memory of word-meanings by making the pupil move his lips as he reads. The process is, however, so laborious

and slow, and the ultimate result so far from being really satisfactory, that with working-class children, at any rate, time should not be wasted in any attempts of the kind, but the child should be put at once to tasks for which he has more natural capacity.

We cannot leave this fascinating subject without first quoting the conclusions Dr. Thomas draws in his earlier paper:

"I. The individual memory elements of a specific sense—auditory, visual, kinæsthetic—which, taken altogether, are necessary for a specific mental faculty or function—reading of words, calculation, reading of musical notes, understanding of spoken words, performance of delicate actions—are stored in the brain in close proximity to one another.

"II. These brain areas occupy definite specific positions, with anatomical relationships common to all human beings alike.

"III. In different individuals the power of organization of one or more of these areas may vary from almost total incapacity (mental defect) to abnormal potentiality (genius) when other centres are normal."

We have often thought that a similar explanation may be given for some at least of the cases spoken of as MORAL DEFECTIVES, an account of which we have included in the next chapter.

Congenital cases of **Hydrocephalus** are not infrequently met with, though of course the condition is also non-congenital. Very different degrees of mental enfeeblement are met with in this type, and it is remarkable that a considerable amount of intelligence may subsist with a very watery brain, as in the case of a girl of eleven, peculiar, but only slightly imbecile, who continued to converse rationally till within an hour of her death, when it was found

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PLATE VI.

FIG. 1.

FIG. 2.

HYDROCEPHALIC TYPE.

To face page 63.

that her large globular skull* contained 20 ounces of fluid to 36 of cerebral matter. In other cases optic neuritis and signs of pressure occur, and convulsions usher in a fatal termination. As a rule, indeed, it is only in cases where active symptoms have subsided that educational methods are admissible. In some cases syphilitic or tubercular lesions have been found. Plate VI., Fig. 2, is that of a hydrocephalic youth, with head circumference of 23 inches, in whose case the chief residual indication of defect was in the direction of moral imbecility.

In **Hypertrophic** cases the head is also enlarged; there is no excess of fluid, but an enlargement of the brain substance; the hypertrophy, however, affects the interstitial tissue only, and is a diffuse gliosis. The distinction between these cases and hydrocephalus is not difficult. For purposes of comparison it is useful to remember that the average circumference of the normal child's head at five is from 20 to 20½ inches, and at ten about 21 inches,† while that of the female adult is 21¾ inches, and that of the male adult is 22 inches. The hypertrophic head is not, however, distended to the same extent as in hydrocephalus, no record existing of one over 25 inches; the shape is square rather than round; there is no bulging in the region of the fontanelles, nor along the sutures, while the fulness is more marked in the temporal region than above the superciliary ridges. In many of these cases there is considerable muscular weakness, though the bodily health is fairly good.

* See Plate II., Fig. 3.

† Thomson, *Clinical Examination and Treatment of Sick Children*, Second Edition, p. 54.

According to Dr. Tredgold, they often suffer greatly from headache and also from epileptic fits.

Another form of enlargement, in one direction at least, of the skull is that known as **Oxycephaly,** or tower skull (French, *tête à tour;* German, *Thurmschädel*). This type is not frequently met with, and has seldom been described from the mental aspect. In some instances it has been confused with other types. For most of the descriptions we are indebted to ophthalmic surgeons, as the ocular defects, which are usually the most marked, have attracted more attention than the mental. Indeed, Patry states that the intelligence is usually normal. In some cases, however, there has been marked mental defect. It is probable that slight mental defect would be found in most cases if the investigations were made by an expert. A fairly typical case was shown by Dr. Potts at the meeting of the Society for the Study of Disease in Children in Birmingham, in June, 1908, two illustrations of which we now reproduce here.* This boy required education in a special school, though he was not very weak mentally. Contrary to what is usual, he had no ocular defect. The condition has been well described by Patry† in a monograph published in 1905, which dealt with ten cases of his own, and, in addition, with the records of fifty-eight published cases. Typical cases are very striking. There is a dome-shaped mound rising up from the forehead, separated from the temples by shallow furrows; the supra-orbital ridges are absent, and the eyes are proptosed and large. At the same time there is an atrophy of the

* See Plate VII.

† *Contribution à l'Étude des Lésions Oculaires dans les Malformations Craniennes spécialement dans l'Oxycéphalie* par André Patry. Paris, 1905.

PLATE VII.

FIG 1.

FIG. 2.

OXYCEPHALIC CASE.

To face page 64.

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PLATE VIII.

FIG. 1.—"MONGOL" PROFILE.

FIG. 2.—"MONGOL" TONGUE.

MONGOLIAN TYPE.

To face page 65.

optic nerve, post-neuritic in type. The exophthalmos is due to malformation of the orbit, the upper wall of which slopes down towards the floor at a more acute angle than in the normal. Many of these patients suffer greatly from headache, and some also from fits of some kind during childhood. Patry states that the cranial deformity commences in the first year of life, and is due to premature synostosis of the coronal and frontal sutures. This theory receives considerable confirmation from the deep convolution markings found in the vault, the expanding brain being driven up into the vertex. Hence the suggestion that these cases would be benefited by craniectomy. Patry endorses Virchow's view that the primary cause both of the cranial deformity and the optic neuritis is a meningitis.

A frequent congenital type, obtaining (in England, at least)* in nearly 5 per cent. of mentally defective children, in greater or less degree, is that which has been designated "**mongol**" or "**kalmuc,**" owing to physiognomical resemblances to those races. In these cases the skull is a short oval,† the transverse and longitudinal diameters approximating, while there is a tendency to parallelism of the frontal and occipital planes. Children of this type have a skin coarse in epidermis, if not furfuraceous; many have sore eyelids, some fissured lips; but one of the most striking peculiarities is the state of the tongue, which is transversely fissured, and has hypertrophied papillæ.‡ Dr. John Thomson§ states that in the

* See paper on "Mongolian Imbecility," by G. E. Shuttleworth, *British Medical Journal*, September 11, 1909.

† See Plate II., Fig. 2; Plate VIII., Fig. 1.

‡ See Plate VIII., Fig. 2.

§ John Thomson, "Notes on the Peculiarities of the Tongue in Mongolism," *British Medical Journal*, May 4, 1907.

early weeks of life the tongue is normal ; between the third and ninth months the papillæ get enlarged, while during the third and fourth years the transverse fissures appear. This latter peculiarity is possibly due to tongue-sucking, which is so common in this type of defective, acting on an abnormally vulnerable mucous membrane. Many of them have almond-shaped eyes, obliquely set ; and this feature, with the squat nose, epicanthic fold, and wiry hair, gives the mongol aspect from which they derive their name. The hands are usually broad and the fingers short, and often the little finger is incurved.* The feet also are characteristically clumsy, with a marked cleft between the big toe and the next one. Laxity of the joints is a marked feature. There is reason to believe that they are essentially *unfinished* children, and that their peculiar appearance is really that of a phase of fœtal life. Some defect of formative force may usually be traced in connection with the intra-uterine life of these cases, not uncommonly ill-health or mental depression of the mother ; and it is remarkable that nearly half of these children are the last born of a long family, when the procreative powers are at a low ebb. In many there is a family history of phthisis ; the majority die, before reaching adult life, of tubercular disease. In children of this type the brain is not necessarily small, but, according to Dr. A. W. Wilmarth,† whose observations are confirmed by Dr. Tredgold, there is a notable diminution in the size of the pons, medulla, and cerebellum. It has been suggested that the imperfect development

* See Plate IX., Figs. 1 and 2.

† A. W. Wilmarth, " Report on the Examination of One Hundred Brains of Feeble-minded Children," *Alienist and Neurologist*, October, 1890.

PLATE IX.

FIG. 1

FIG. 2.

"MONGOL" HANDS.

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PLATE X.

FIG. 1.

FIG. 2.

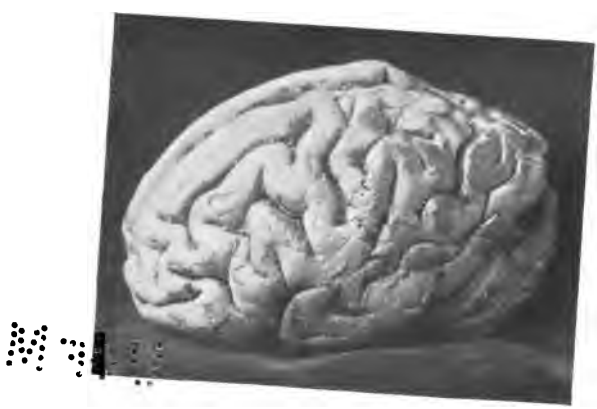

FIG. 3.

"MONGOL" BRAINS.

To face page 67.

of these parts may result in a deficient expansion of the base of the skull, and that this leads to the characteristic physiognomy of this class. The brain is characterised by great simplicity of development, and by paucity of multipolar cells. The convolutions are large and coarse, and there are few secondary convolutions.*

"Perhaps two-thirds, or even more, of all idiots are of the scrofulous constitution," says Dr. Ireland; and consequently we are not surprised to find various **tubercular** lesions in the majority. In some, indeed, the history, personal and hereditary, of tuberculosis points to the constitutional taint as contributing to the mental condition. Strumous glands and ulcers, tubercular affections of joints and serous membranes, are, of course, frequent accompaniments of this variety.

Amongst other pathological conditions sometimes met with, dating from birth, are those resulting from meningeal hæmorrhage occurring from undue pressure during parturition, the injurious element being prolonged pressure rather than instrumental interference. In these cases atrophic changes take place in the Rolandic area, and as a consequence ensue spastic contractions of the limbs (bilateral or unilateral), with inco-ordination and athetoid movements. The intellectual deficiencies of children suffering from "**birth-palsies**" are more apparent than real, the intelligence which they possess being masked by their physical infirmities.†

Cretinism may here be alluded to as a congenital taint, though its full development in many cases takes place after birth, producing mental deficiency.

* See Plate V., Fig. 1.; also Plate X., Figs. 1, 2, and 3.

† See Plate XIV., Figs. 1 and 2.

Intra-uterine cretinism fully developed results usually in the death of the fœtus, which displays a curious stunted conformation of body, with redundant skin, thickened cranial bones, and imperfectly formed face. The essential lesion is absence or atrophy of the thyroid gland, and there are often found fatty tumours in the supraclavicular regions. Cases of sporadic cretinism usually met with in this country differ from

FIG. 1.—AMERICAN CRETINS, AGED 34 AND 24 YEARS.
(J. Moorhead Murdoch, M.D.)

the above in the fact that the child appears normal at birth, but the characteristic conformation and mental hebetude are gradually developed. Progressive atrophy of the thyroid brings about a dwarfing of the physical growth and of the mental powers, and if the patient arrives at adult life he still retains the bodily and mental stature of the child (see Plate XI., Figs. 1 and 2). The face is of a sallow colour, with a bright patch on the cheeks. The

PLATE XI.

FIG. 1.

SPORADIC CRETINS.

FIG. 2.—"SARAH," AGED 22 YEARS.
(Formerly in Royal Albert Asylum.)

To face page 68.

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satisfactory results of thyroid treatment will be hereafter set forth.

There is a superficial resemblance in many cases between cretins and mongolians, both being backward in bodily development, with misshapen hands and feet, squat noses, large tongues, and peculiarities of integument. On careful examination, however, the difference is considerable. The annexed table, setting forth the characteristic differences, may be serviceable, for correct diagnosis is of importance to save parents the disappointment of expecting marked improvement from thyroid medication when the case is one of mongolism:

MONGOLISM.	CRETINISM.
1. Characteristics noticeable from birth.	1. Characteristics often not noticeable till sixth or seventh month.
2. Skull brachycephalic: contour rounded or short oval: longitudinal and transverse diameters nearly correspond.	2. Skull dolichocephalic: flat at top (fontanelles close late), expanded laterally; broad behind, often asymmetrical.
3. Forehead usually smooth.	3. Forehead usually wrinkled.
4. Palpebral fissures "almond-shaped," and more or less oblique upwards and outwards. Frequent epicanthus. Strabismus common. Ciliary blepharitis frequent.	4. Palpebral fissures horizontal, but appear small owing to pseudo-œdema of eyelids. Strabismus and ciliary blepharitis less common.
5. Cheeks chubby, often florid. Complexion mottled.	5. Often circumscribed malar flush; complexion ashy or waxy.
6. Lips often transversely fissured. Lower lip may be pursed up over upper.	6. Lower lip often everted. Mouth open. Drivelling common.

MONGOLISM.	CRETINISM.
7. Tongue large and coarsely papillated if not fissured. Tongue frequently protruded and drawn back.	7. Tongue large, but not coarsely papillated or fissured. Tip of tongue thickened, and constantly protruding.
8. Skin smooth in infancy, but furfuraceous later; not redundant or "baggy."	8. Skin dry and scaly; forms folds here and there, being redundant and "baggy."
9. Hair "wiry," often "mouse-colour," but sometimes blonde. Downy growth common on forehead and cheeks.	9. Hair harsh, coarse, and scanty. Usually of darkish tint (Bourneville says brown); scalp often eczematous.
10. Thyroid gland palpable to greater or less extent.	10. Thyroid gland impalpable to most thorough examination.
11. No fatty tumours (pseudo-lipomata) in posterior triangle of neck.	11. Fatty tumours (pseudo-lipomata) frequently found in posterior triangle of neck, etc.
12. Long bones somewhat shorter than usual, but slender.	12. Long bones shortened and thickened, in some cases bowed.
13. Hands broad; thumb and little finger short, the latter often curved towards ring finger. Fingers taper at ends.	13. Hands broad, thick, and stumpy, with wrinkled skin. Fingers square at tips.
14. Feet large and flat. Fissure between great and next toe often seen.	14. Feet squat; skin redundant about ankles and dorsum of foot.
15. Abdomen often distended; occasional umbilical hernia; often inguinal hernia.	15. Abdomen very bulky and prominent with folds of skin; umbilical hernia common.
16. Expression more or less vivacious and mobile, observant and imitative.	16. Expression dull and immobile; unobservant and apathetic.

Similarities in each Variety.

Deficient stature, flattened bridge of nose, with expanded alæ, late and irregular dentition, deferred closure of fontanelles, retarded puberty.

At this stage we may briefly consider the condition of **infantilism** so well described by Dr. John Thomson.*

The term merely denotes a group of symptoms. The essential feature is that the genital organs remain immature, while just as the primary sexual characteristics of adult life fail to appear at the proper time, so also do the secondary sexual characteristics of body and mind. In some cases the intelligence is fairly normal, but generally it is rather weak and childish. Infantilism is not a prominent feature of most groups of the mentally defective, but becomes so in some cases of microcephalus and severe spastic diplegia. Dr. Thomson classifies the cases under three headings. The first group, which he calls the *Idiopathic*, shows no serious general or local disease. In the second, or *Cachectic*, serious general disease or poisoning exists. The most common disease is chronic tuberculosis, next syphilis; malaria, leprosy, and some of the common infective diseases have also been blamed, as has also any form of heart disease that begins early in life, and causes much interference with the general circulation. The third group depends on gross lesions or defects of important internal organs. The organ most often to blame is the thyroid gland, and Dr. Thomson points out that one type of the condition constitutes the mildest degree of cretinism, with symptoms so

* "Infantilism," *System of Medicine*, Allbutt and Rolleston, vol. iv., part i., p. 486.

slight that the real cause is often overlooked. He brings forward evidence, however, to show that defective action of other internal organs may produce the same symptoms. The account of two cases in which the pancreatic secretion was proved to be in abeyance, and in which development resumed its normal course on the regular administration of pancreatic substance, is particularly interesting.

In addition, there remain a large group of cases in which mental deficiency dating from birth may be said to depend upon a highly **neurotic** heredity. It is probable that in such cases there is original defect in constitution of neurones with a tendency to irregular discharge, and an imperfection of those inhibitory arrangements which in the normal child are gradually evolved. Dr. J. Langdon-Down long ago pointed out* the frequent association with the neurotic type of a "prow-shaped skull"—*i.e.*, a cranium tapering anteriorly to a prominent ridge, marking the position of the medio-frontal suture, synostosis of which has been deferred, owing to some intra-uterine check, which has also arrested the development of the cerebral centres, and rendered them unstable. Such cases have been designated *Scaphocephalic*,† and even if they show no very marked intellectual defect in early childhood, are apt to break down from the strain of second dentition or of puberty.

We have now traced the prominent pathological conditions of the several typical varieties of CONGENITAL MENTAL DEFICIENCY, viz. :

1. **Microcephalus.**
2. **Defects of Special Areas and Partial Atrophies** (including **Word-blindness** and **Word-deafness**).

* *Mental Affections of Childhood and Youth*, J. Langdon-Down, 1887.

† See Plate XII., Fig. 2.

PLATE XII.

FIG. 1.—AMERICAN IMBECILE WITH "LEPTOCEPHALIC" CRANIUM.

FIG. 2.—AMERICAN HIGH-GRADE IMBECILE WITH SCAPHOCEPHALIC CRANIUM.

(J. Moorhead Murdoch, M.D.)

From *Journal of Psycho-Asthenics*, vol. xi. (by kind permission).

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3. **Hydrocephalus** (congenital).
4. **Hypertrophic.**
5. **Oxycephaly, or Tower Skull.**
6. "**Mongol**" or "**Kalmuc**" type.
7. **Tubercular** cases.
8. **Birth-palsies,** with athetosis.
9. **Cretinism** (congenital).
10. **Primarily neurotic.**

Cases which do not conform to any of the above types, but still show abnormal configuration, are spoken of by some authorities as **Simple Congenital.** This group has been well described by Dr. Fletcher Beach.* They show no marked deformity of the skull or limbs, but are usually below the average height. The expression of the face is vacant. There are several obvious anatomical peculiarities, the so-called stigmata of degeneration. These are usually multiple, instead of occurring singly, as may happen in normal individuals. Found in the face, head, and hand, they take the form of obliteration or exaggeration of normal markings, such as those of the antihelix or other parts of the ear, or consist in marked diminution in size of the mouth, orbital fissures, or lower jaw. The teeth are often irregular, and may be arranged in two rows, while the ear may be implanted too far back.

In the intermediate group of cases, which we have referred to as DEVELOPMENTAL, we include those forms of mental weakness which evidence themselves at some crisis of development, such as the first or second dentition, or the epoch of puberty,

* *Types of Mental Deficiency*, Report of First National Conference of Special School-Teachers, held in Manchester (Tinling and Co., Liverpool), 1904.

although they are traceable to an original defect of nervous constitution. Eclampsic, epileptic, syphilitic, and some post-febrile cases, may be thus classified.

A large number of cases of mental deficiency are attributed by parents to **convulsions during dentition.** Thickened cerebral membranes, sometimes thickened skulls, are seen in many of these cases, with consequent atrophic changes in the brain substance. In cases of persistent **epilepsy,** with mental weakness, the same class of lesions is sometimes met with, though, of course, the *fons et origo mali* is to be looked for in the minute structure of the nervous tissue. As a matter of fact, there is no clear distinction between infantile convulsions and epilepsy. Most infants who have teething fits are of neurotic heredity, and a number of them are the victims later on of " idiopathic " epilepsy.

Syphilitic cases are comparatively rare, though more frequent than was formerly realised. Mental deterioration does not usually show itself until the period of second dentition. The stigmata of inherited syphilitic taint, such as specific skin affections in infancy, radiating scars around the mouth, and Hutchinsonian teeth, or at any rate teeth of the " cork-screw " type, must be looked for not only in the patient, but also in his brothers and sisters. One of the latter may give a clue to the diagnosis, while the mentally affected child may show no other sign. Death usually occurs in a few years after the onset of the symptoms, which progress much in the manner of general paralysis of the insane, and at the autopsy we find thickening of the cerebral arteries (from endo-arteritis), and of the meninges, with marked atrophy of the convolutions. (Plate XIII. represents this type.) Recently these cases have

PLATE XIII.

INHERITED SYPHILIS.

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been described under the designation of "Juvenile General Paralysis," a description of which will be found in the next chapter.

Under the title of **Amaurotic Family Idiocy** some curious and hopeless cases of infantile cerebral degeneration, with symmetrical changes at the macula lutea, commencing about three months after birth, and observed only among Jewish children, have been described by Sachs of New York and other American authorities, and by Mr. Warren Tay and Drs. Kingdon and Risien Russell* in this country. The first abnormalities noticed are weakness of the muscles of the back and neck and imperfection of sight. With the ophthalmoscope there is seen in the macula an oval whitish-grey patch, with softened edges slightly raised above the general surface of the retina. The *fovea centralis* appears as a dark cherry-red spot in the centre of the patch. Later on there is optic atrophy and complete blindness. The senses of taste and hearing are preserved, the latter being particularly acute. The muscles become weaker and weaker, those of the whole body becoming involved. There is marked emaciation, but, in the final stages, rigidity of the extremities, with retraction of the head. There is no fever at any time. The thoracic and abdominal organs are normal. Death usually occurs in less than two years. The cause is possibly a toxin, causing degeneration of the cortical neurones, the optic nerves, and the pyramidal tracts throughout their whole course. Dr. Poynton,† who has recently written on the subject, after seeing four cases and studying one by modern neurological

* *Med. Chir. Trans.*, vol. lxxx., p. 87.

† "Amaurotic Family Idiocy," *Brit. Med. Journal*, May 8, 1909, p. 1106.

methods, ascribes the condition to "some inherent bio-chemical property of the protoplasm of the cells." He states that the disease is primarily one of the interfibrillar protoplasm of the cells, and describes the changes in the nerve cells as "swelling of the cell body with frequently gross alteration in shape; disappearance of Nissl bodies; excentric position of nuclei; vacuolization of the protoplasm." In one case Dr. Mott had the blood and cerebro-spinal fluid examined for Wassermann's reaction with negative result, thus confirming the clinical experience that it is not a result of syphilis.

Of clearly NON-CONGENITAL cases the main divisions are **traumatic** and **post-febrile,** and in each the characteristic lesions are the products of inflammatory processes. Dr. Wilmarth,* formerly the pathologist of the large Pennsylvania Institution for Feeble-minded Children, states that in 100 consecutive autopsies made by him, he found in 54 conditions "constituting the residual effects of former disease or traumatism." In a large number of cases sclerosis with atrophy was observed; in a few the *sclérose tubereuse* of French writers. Thickened and adherent membranes, following meningeal inflammations and interfering with the due supply of blood to the cerebral cortex, were noticed in a considerable number of cases; whilst porencephalus, which may be considered in some instances to be the terminal condition of an acute inflammatory lesion, existed not infrequently.

Emotional shock, such as fright to a young child confined in a dark cellar, or from the bite of a dog

* "Causation and Early Treatment of Mental Disease in Children," *Journal American Medical Association,* August, 1894.

is sometimes assigned as a cause of mental defect. How the nervous tissue is affected by shock is not easy to explain, but trophic changes, brought about by the sympathetic system, are probably important factors. At any rate, cerebral atrophy, as if from arrested development, is found in some of these cases. **Toxic** cases, such as those of infants drenched with alcohol or narcotics, are also produced by an interference with a due nutrition of the nerve elements. The dangers to infants from alcohol are very real and very frequent, as all readers of Mr. George R. Sims' spirited article, "The Cry of the Children," reprinted from the *Tribune*, must admit. Fortunately the Children Act now excludes infants and children from public-houses, but much of the evil still remains. There is still complete ignorance in some classes of the harm done to nursing mothers by the taking of alcohol. The time, too, is more than ripe for some legislation which will make it impossible to advertise as safe for children proprietary medicines which contain morphia and other narcotics.

In conclusion, we may briefly sum up the various non-congenital types of mental weakness, the pathological circumstances of which we have referred to, as follows:

A. DEVELOPMENTAL CASES:

1. **Eclampsic.**
2. **Epileptic.**
3. **Syphilitic** (inherited).
4. **Amaurotic Family Idiocy.**

B. ACCIDENTAL OR ACQUIRED:

1. **Traumatic**
2. **Post-febrile** } **inflammatory lesions.**
3. **Emotional.**
4. **Toxic.**

We shall find that these divisions, together with those of the congenital types previously given (pp. 72 and 73) will be serviceable in considering points in the etiology, diagnosis, and prognosis of mental deficiency, which we shall proceed to discuss in the next chapter.

CHAPTER VI

ETIOLOGY, DIAGNOSIS, AND PROGNOSIS

In treating the subject of the ETIOLOGY of cases of mental deficiency, we must consider the various factors of causation in the light of clinical experience. Dr. Shuttleworth, in 1892, recorded his statistics (in conjunction with those of Dr. Fletcher Beach) in an article in Hack Tuke's " Dictionary of Psychological Medicine," in which 1,200 cases observed at the Royal Albert Asylum, and 1,180 cases at Darenth Asylum, are collated. It is not logical to attribute to a single specific cause the majority of cases met with, inasmuch as on investigation we shall discover several contributory factors. So strong, indeed, is the tendency of Nature to revert to a healthy type, that the solitary infraction of physiological law is not often visited with the penalty of mental abnormality; and if we only look back far enough, we shall probably find that such a culmination is reached by the gradations of repeated transgressions. Not every drunken parent procreates an idiot; but when inherited nervous instability from this or other causes is intensified in the next generation by injudicious marriage, or by unfavourable environment, instances of mental degeneracy are apt to occur. In our experience physical factors play an important rôle in the production of mental defects. A **phthisical family history** is, indeed, the predominant factor traceable

in Fletcher Beach's and Shuttleworth's cases, the percentage in which this was found being 28·31, against 21·38, in which **hereditary mental weakness** (insanity or imbecility) was recorded. It is true, however, that, in addition, **epileptic** or **neurotic inheritance** showed a percentage of 20. **Parental intemperance** was noted in 16·38 per cent. of the same group of cases, ranging from 13·25 at the Royal Albert Asylum, where the large majority of cases were above—some considerably above—the pauper class, to 19·57 at the pauper asylum at Darenth. Clear evidences of **inherited syphilis** were found in only 1·17 of the cases, though the taint was suspected in others. **Consanguinity** of parents or grandparents appeared in less than 5 per cent. of the cases noted; and this factor would appear to be potent for harm in proportion to the risk entailed in intensifying "family weaknesses." Almost 30 per cent. were attributed to **maternal ill-health, accident,** or **shock** during gestation. These factors, sometimes occurring in combination, exhaust the principal CAUSES ACTING BEFORE BIRTH.

While the above statistics have been gathered from cases of idiots and imbeciles admitted to residential institutions, there is no doubt that the same sort of causes, acting, however, with less force, are accountable for those milder cases of mental infirmity, many of which are now found in day special schools. Indeed, there is now a considerable mass of evidence to this effect. Before, however, quoting from this, and mentioning other possible causes before birth, we may draw attention to the fact that mentally feeble children are often the offspring of highly neurotic parents, sometimes of highly cultured persons, exceptionally gifted in a particular direction. It would

seem, indeed, in some cases that the parents have themselves expended so much of their nervous energy that they have little left to transmit to their offspring; and familiar instances will occur to everyone of distinguished men and women afflicted with children whose mental endowments are below the average. Bearing in mind the aphorism that

"Great wits are sure to madness near allied,"

and that a neurotic temperament is sometimes associated with intellectual brilliancy, this need not surprise us, though parents usually consider it as extraordinary. Mental feebleness is in some few cases merely a consequence of feeble health, and with improved physical conditions the mental impairment may gradually disappear.

In some cases the apparent mental weakness is largely to be accounted for by an unfavourable environment. When investigating at Stoke-upon-Trent for the Royal Commission on the Care and Control of the Feeble-minded, Dr. Potts found several cases of abnormally backward children. In several instances these children, after being almost hopeless at school for many months, unexpectedly improved, and subsequently developed as well as their normal fellows. He attributed the condition partly to the mothers going out to work and leaving the children shut up for many hours, ill supplied with food, and with no one to talk to or play with. When such children come to school they sometimes actually have to be taught to talk, and much else that a child should learn at home.

In confirmation of the principal factors in etiology we have just quoted, we may refer particularly to the investigations of Dr. Tredgold, Dr. Lapage, and

Dr. Potts. Dr. Tredgold studied a large number of cases in and around London, and in 150 obtained "full particulars of the family for at least three, and sometimes four, generations." Dr. Lapage examined and inquired into the circumstances of 250 mentally defective children in Manchester. Dr. Potts, working with Mrs. Hume Pinsent, and with the help of Dr. Margaret O'Connor and Dr. Violet Coghill, obtained records of 250 mentally defective children in Birmingham, and also, as a control, the family histories of 100 normal children of the same age in the same district. In all these cases, with the exception of a few of Dr. Lapage's, the children's homes were visited, and the parents seen and often examined. Although the percentages vary, all these investigators found the same antecedent factors.

A phthisical family history was found by Dr. Tredgold in 34 per cent., by Dr. Lapage in 11·2 per cent., all these, however, being marked cases; and by Dr. Potts in 43·2 per cent., as compared with 17 per cent. in normal cases. Discrimination is necessary in deciding whether a particular family history is phthisical or not. Some observers say it is so common that almost any morbid condition can in a sense be proved to be due to it. This is, however, not the case if due care be exercised and regard had to the fact that, the deaths due to tuberculosis among the ordinary population being as high as 1 in every 9, records of a number of cases in a family are of little value, unless they state the exact number of the family, and so demonstrate whether the incidence is above the normal. Value may certainly be attached to such statistics as those we have quoted, where only marked cases are recorded, or only the direct heredity from parents and grandparents, ignoring collaterals. There is a

difference of opinion as to how far tubercular disease acts in the causation of mental defect, some authorities believing that it acts directly, while others regard it rather as a concomitant of degeneracy to be found along with various degrees of amentia in families on the racial down-grade. Thus, Sir James Crichton-Browne, when giving evidence before the Royal Commission on the Care and Control of the Feeble-minded, said: "The true connection between tuberculosis and mental defect is to be found in the fact that they are both apt to fasten on a particular kind of human soil, weakly and little resistent to morbific agents." While giving due weight to this idea, we are probably justified in concluding with Dr. Tredgold* that "in the absence of neuropathic inheritance, *consumption* and *alcoholism*, if very strongly marked, may produce mental defect."

Hereditary mental weakness has been found by many careful investigators to be the most frequent antecedent factor of all. This coincides with Dr. Shuttleworth's figures, when his percentages of epileptic and neurotic inheritance are added to those of insanity and imbecility. Dr. Tredgold traced a definite neuropathic inheritance in 64·5 per cent., Dr. Lapage in 27·9 per cent., and Dr. Potts in 28·4 per cent., as compared with 10 per cent. among the normal. Here again there is some difference of opinion, one school holding that mental weakness is always either inherited as an inborn characteristic, or else occurs as a spontaneous variation, independently of the environment. The researches, however, of the late W. L. Andriezen, and the investigations

* Tredgold, *Report and Evidence of the Royal Commission on the Care and Control of the Feeble-minded*, 1908, vol. i., p. 329.

of J. Beard* into the morphological continuity of germ-cells, demonstrate the importance of the environment of the germ-cells. We have, moreover, already stated it to be our experience that physical factors play an important rôle in the production of mental defects, although in any one generation these may appear in the majority of cases to be inherited from mentally defective progenitors.

How far **parental intemperance** is to blame has given rise to much controversy. Dr. Lapage found a marked history in 7·7 per cent., and in 1·9 per cent. no other factor was to be noted. Dr. Tredgold recorded 46·5 per cent. of alcoholism. Dr. Potts noted 41·6 per cent., in contrast to 22 per cent. among the normal. In a paper read before the Society for the Study of Inebriety (London) in October, 1908, Dr. Potts† made a careful review of the evidence as to how far alcoholism in a previous generation was accountable. He cited many authenticated cases where it appeared to be a direct cause, and, in particular, one quoted by the late Dr. Andriezen‡ of a man aged twenty-two, the second child of a family of six. This individual was begotten by his father while in a state of "alcoholic intoxication and exaltation. The child was neurotic, and at twenty-two had to be admitted to an asylum suffering from *dementia præcox*. The father, a well-to-do man, had several mistresses, and was the father of several other children. Though

* J. Beard, "A Morphological Continuity of Germ-Cells as the Basis of Heredity and Variation," *Review of Neurology and Psychiatry*, vol. ii., 1904.

† W. A. Potts, "The Relation of Alcohol to Feeble-mindedness," *British Journal of Inebriety*, January, 1909.

‡ W. Lloyd Andriezen, "The Problem of Heredity, with Special Reference to the Pre-Embryonic Life," *Journal of Mental Science*, January, 1905.

given to occasional alcoholic indulgence, he abstained from cohabiting when in a state of intoxication, and his other children, born of his sober moments, were not afflicted mentally or bodily like the patient referred to." Attention was directed in this paper to the important comparative statistics of Dr. Sullivan and others, and especially to the investigation of Dr. MacNicholl in New York. This inquiry, undertaken for the New York Academy of Medicine in 1901, recorded, among other observations, the results of tracing the family histories of 3,711 children through three generations, with great detail in regard to the taking of alcohol. Dividing them into two classes—viz., those free from hereditary alcoholic taint and those with that taint—it was found that of those free from hereditary alcoholic taint, 96 per cent. were proficient, 4 per cent. were dullards, and 18 per cent. suffered from some neurosis or organic disease. On the other hand, of those with hereditary alcoholic taint, 23 per cent. were proficient, 77 per cent. were dullards (and of these more than one-third were very deficient), and 76 per cent. suffered from some neurosis or organic disease.

The conclusions drawn at the end of the paper are that " the evidence is not clear that alcoholism by itself in the father will produce amentia, but it is quite plain that in combination with other bad factors it is a most unfavourable element, while maternal drinking, and drinking continued through more than one generation, are potent influences in mental degeneracy."

Inherited syphilis has recently been shown to act more frequently as a cause than was suggested by the earlier records. Dr. Mott has specially studied for some years past the effects of syphilis, acquired

and congenital, on the nervous system, and arrived at the conclusion that syphilis is an active agent in the production of congenital weakness and the degeneracy that accompanies it. He has demonstrated that " the measure of the effects of syphilis in the production of feeble-mindedness and epilepsy should not be estimated only by the cases in which there are visible and characteristic signs of syphilis on the body, for he has observed one member of a family with syphilitic notched teeth, another without any external sign, but with severe visceral and brain disease, while a third was an imbecile. He has also seen many other examples pointing to the same conclusion." Dr. Mott* further states that " it may be thought that because syphilis of the parents produces sterility, miscarriage, and abortion, its dangers are greatly minimised, but it cannot be doubted that if the poison is sufficiently strong to kill the embryo either before or shortly after birth, it must have a devitalising effect on the offspring that survives. Though hereditary neurosis or psychosis greatly increases the liability of the syphilitic poison to affect the nervous system, yet in numbers of the cases there was no pre-existing neuropathic family history—in fact, sometimes the syphilitic poison appeared to induce a neuropathic condition in the offspring." Dr. Mott also explained that in some cases the blindness, deafness, or mental deficiency or disease did not manifest itself till between eight and puberty. He at least fully corroborates that important finding of the Inter-departmental Committee on Physical Degeneration, which may be aptly quoted at this juncture. " It must be remembered that even Professor

* *Minutes of Evidence taken before the Royal Commission on the Care and Control of the Feeble-minded*, vol. i., p. 453.

Cunningham, while denying the influence of heredity in most cases, expressed the firm belief that diseases such as syphilis and alcoholism transmit their effects to the third and fourth generation, and in this opinion the Committee fully concur."

Dr. Shuttleworth's figures show what a number of cases are attributed by the public to **maternal ill-health, accident,** or **shock** during gestation, and it is only reasonable to suppose that such conditions should exact their toll. Dr. Mercier and others, when giving evidence before the Royal Commission on the Care and Control of the Feeble-minded, gave it as their opinion that bad nutrition of the mother during pregnancy, or poisoning by such agents as alcohol and morphia, were sometimes to blame. Sir James Crichton-Browne referred to an idiot he had seen, whose mother during pregnancy had Asiatic cholera. Her children born both before and after this were healthy. Dr. Potts* has recorded a single case of mental defect in the middle of a large family, probably due to the mother sustaining a complicated fracture of the arm during pregnancy. He ascertained, however, that the mother was a confirmed alcoholic, and expressed the opinion that such unfortunate developments only occurred when some other factor was also present. Such was the case in an instance he recorded of feeble-mindedness ascribed by the parents to the father having a severe attack of smallpox some twelve months before the child was born. While dealing with this aspect of the subject we may refer to the possible serious consequences of artificial restriction of families, and also of attempts to procure abortion. Sir James

* "Causation of Mental Defect in Children," *Brit. Med. Journal*, October 14, 1905.

Crichton-Browne, in his evidence to the Royal Commission, said: "One cause productive of idiocy or feeble-mindedness operating during utero-gestation, and deserving of careful attention at this time, is attempts to procure abortion. When that is instrumentally attempted without success, injury may be done to the head of the fœtus, and when drugs are used these may disastrously interfere with its nutrition and growth. . . . These attempts at abortion, and also the practices employed to prevent pregnancy, with a view to the restriction of the family, are said by all the physicians who gave evidence before the New South Wales Commission to have a detrimental effect on the nervous system of the woman, producing hysteria, neurasthenia, and mental disturbance, and thus acting unfavourably on the health of any children who may be subsequently born."

Among CAUSES ACTING AT BIRTH, that to which undoubtedly most importance attaches is **prolonged parturition.** It has been alleged by Drs. Winkler, Bollaan, and others, that the use of **forceps** is accountable for a considerable amount of cerebral injury and consequent mental impairment. So far from this being the case, it would appear from Shuttleworth's and Fletcher Beach's statistics that **protracted pressure** without instrumental interference is a much more potent cause both of mental and nervous defect, the latter factor figuring more than four times as often as the former (*i.e.*, 14·24 per cent., as compared with 3·31) in their combined etiological table, whilst in addition the occurrence of *asphyxia neonatorum* is noted in 12·96 per cent. of Dr. Beach's cases. The late Dr. Langdon-Down,* indeed, esti-

* "The Obstetric Aspects of Idiocy," *Trans. Obstet. Society*, 1876.

mated the frequency of this condition at 20 per cent. amongst imbecile children generally, and at 40 per cent. amongst those who were first-born. It is unquestionable that the *asphyxia neonatorum* so often due to protracted unassisted labours is in some cases followed by birth-palsies, and enfeeblement more or less severe of the intellectual powers. It is probably accountable for not a few of the milder types of mental feebleness.

Premature birth was noticed as a factor in 3·52 per cent. of the cases in the same series.

CAUSES WHICH COME INTO PLAY AFTER BIRTH are commonly heard of, as parents readily put these forward rather than the prænatal cause of a congenital defect, which they are loth to recognise. Consequently such assigned causes as a fall, a fit, or a fright, must be received with caution, and it must be borne in mind that such may be at most the exciting cause, sometimes merely the consequence or coincidence, of a nervous catastrophe to which the child is congenitally predisposed. In the last chapter we referred to the pathology of developmental cases, and under this head many of those produced by causes acting after birth would properly fall. This remark especially applies to the cause most commonly assigned of all others for mental deficiency in children — viz., **convulsions during teething** (eclampsia)—which figured in the statistics of the Royal Albert Asylum to the extent of 32·58 per cent. (nearly one-third of the admissions). There is no doubt that infantile convulsions frequently occur without producing any subsequent mental impairment, and when it follows it is safe to assume, except when inflammatory lesions have been set up, that there has been some inherited brain abnormality.

Epilepsy is also a commonly assigned cause. According to Dr. Tredgold,* a special examination with regard to convulsions in over 500 mentally defective patients showed that in cases presenting no paralysis or other indication of gross cerebral lesions, and in whom, therefore, the attacks were idiopathic epilepsy, convulsions occurred in 37 per cent.; whilst in patients presenting signs of gross lesions they occurred in 70 per cent. There are no doubt cases in which a previously bright child, afflicted with epilepsy, falls into a state of mental hebetude; but in the majority of cases both the epilepsy and the mental abnormality are common consequences of inherited nervous instability. Much the same may be said with regard to the rôle of **infantile paralysis** as a factor of mental deficiency. Though slight injuries are often set forth as causes when quite inadequate, there is no doubt that **traumatism** (chiefly in the form of injury to the head) is a *bona-fide* cause in a large number of cases—*e.g.*, in 8·25 per cent. of the admissions to the Royal Albert Asylum. **Fright** or **shock** (mental) shows as a factor in about 3 per cent. of the cases; and in such instances as that of a child cruelly locked up in a dark cupboard for several hours, or scared and bitten by a fierce dog, these shocks may be efficient causes. **Severe febrile illnesses,** such as whooping-cough, scarlatina, measles, and smallpox, were assigned as causes in nearly 10 per cent. of the admissions to the Royal Albert Asylum, and where meningitis had supervened, probably with truth. It is remarkable that the statistics, both at Lancaster and Darenth, gathered at a time when the worst features of our elementary school system were in vogue, give but little prominence to "over-

* *Mental Deficiency*, 1908, p. 190.

pressure" as a factor, being noted in only 0·16 per cent. of the 2,380 cases.

DIAGNOSIS.—The practical question often arises: How shall we recognise mental abnormality in a young infant? And the further inquiry may follow—Is the mental abnormality *congenital* or *acquired?* Mothers are proverbially blind to imperfections in their own offspring, and in many cases it falls to the medical attendant to point out the painful fact that the poor baby is not "all there." It behoves him, therefore, to be well up in the diagnostic marks of infantile feeble-mindedness.

As regards the question of the earliest age at which mental deficiency can be recognised, we may say that in well-marked cases a diagnosis is possible during the early months of life. If there is great difficulty in getting the baby to suck, and careful examination shows no physical condition in either mother or child to account for this, mental weakness may be suspected. It would be confirmed by the child's configuration conforming to one of the definite types described in the last chapter, such as the microcephalic or mongolian. Discrimination must be exercised in deciding that there is an approximation to the type as a whole, and not merely an exhibition of one of its more prominent features, such as an epicanthic fold, which is not so very uncommon in quite normal individuals. On the other hand, we cannot expect to find the transverse furrows on the tongue in an infant mongolian, for they develop later. Cretins have been diagnosed at the third month, but when no definite type is recognised, judgment must be postponed and the progress of development carefully watched. In the slighter cases often no opinion can be given till seven years of age, or even a little later.

The diagnostic marks of infantile mental defect may be grouped under four heads—viz. :

1. **Cranial Abnormalities.**
2. **Formative and Developmental Defects.**
3. **Abnormality of Nervous Action.**
4. **Defects in Nutrition.**

1. **Cranial Abnormalities.**—The most significant is, of course, **Microcephalus.** As has been previously stated, not only deficient size, but also characteristic

FIG. 2.—MICROCEPHALIC IDIOT, AGED 20.

(From *Journal of Psycho-Asthenics.*)

form of head, is indicative of this abnormality (see p. 54, *ante*). Taking the average head circumference at nine months as 17 inches, and at twelve months as 18 inches, any notable deficiency in head measurement in a child otherwise of normal size may be taken to betoken microcephalus. It has been alleged that in some cases there exist absence of soft fontanelles and other signs of premature synostosis

but this is the exception, and not the rule, in microcephalus, in which the small skull is simply the diminished envelope of the brain of which the normal development has been arrested, probably about the fifth month of gestation. We must refer to our previous description of the characteristics of microcephalus (see p. 54). Here we need only observe that there is commonly but little sensorial deficiency or muscular weakness, so that the power of grasping, sucking, etc., is not impaired. The palate will be found high and narrow ; in form, like a V or a Gothic arch. Such abnormality of palate, though more frequent in mentally defective children, is, however, by no means a definite indication in these days of feeding-bottles and proprietary foods.

Intra-uterine **Hydrocephalus** will probably have given rise to a difficult labour, and the cranial abnormality in the child is not likely to escape notice. In some cases sensorial deficiencies, as of sight or hearing, are associated with this variety. We must remember, however, that the investigations of Ziegler, Freud, and Tredgold have shown that gross lesions of the brain, though frequently associated with mental defect, are not essential to that condition.

Hypertrophic cases, although less striking, attract attention in much the same way. A diagnosis from Hydrocephalus can be made by noticing the differences set forth in the last chapter, where we have also stated all that is necessary for the recognition of **Oxycephaly,** with its great increase in the vertical measurement of cranium.

The so-called " **Mongol** " type leaves its impress not only on the physiognomy, but on the form of the head, as has been already described ; and there should be no difficulty in recognising it even in very early life.

Marked asymmetry of skull is met with in HEMIPLEGIC cases; and other distortions sometimes occur, especially after a difficult labour. Occasionally injuries from forceps leave a permanent mark, but in our experience these are not more common with defective than with normal children. Asymmetry must not be taken as of itself a sign of mental defect; indeed, in adult life it is said to be a mark of culture. Prolonged (dolichocephalic) crania with a

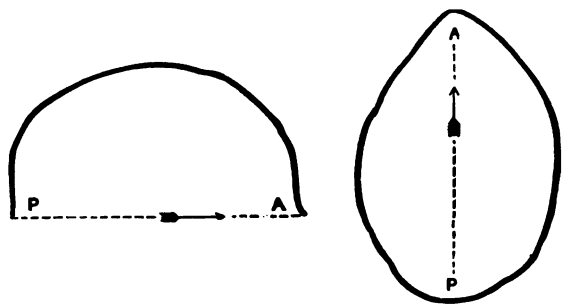

FIG. 3.—ANTERO-POSTERIOR AND CIRCUMFERENTIAL CONTOURS OF SCAPHOCEPHALIC CRANIUM.

median longitudinal ridge, especially over the sagittal suture, are met with both in normal and abnormal children, and consequently the scaphocephalic form cannot be called diagnostic. But the persistence of a medio-frontal suture, or the existence of a medio-frontal ridge towards which a narrow forehead tapers, may be accepted as signs of imperfect development of the frontal lobes. Scaphocephalic crania must not be confused with oxycephalic; in the former it is the antero-posterior diameter, in the latter the vertical, that is large.*

* See Plate VII., facing p. 64, and Plate XII., facing p. 72.

2. **Formative and Developmental Defects.**—As signs of imperfection of physical development are often associated with mental defect, we should look for such abnormalities of formation as hare-lip; cleft, high, and misshapen palates; deficient ear-lobes, sometimes adherent to the face and unduly set back, or at different levels on the two sides; supernumerary auricles represented by tags of projecting skin; epicanthic folds extending across the caruncle; opacity of ocular media; coloboma iridis; nose unusually indented at bridge or depressed; nostrils looking forward, or shaved off at the sides; hairy growths or moles on forehead or face; nævi; rough and scaly condition of skin; imperfections of nails; general blueness of face, lips, etc., from cardiac malformation; blueness and coldness of hands and feet. None of these stigmata of physical failure necessarily imply mental deficiency, but their occurrence will lead, at any rate, to suspicion on the subject.*

3. **Abnormality of Nervous Action.**—Spontaneous muscular activity, though with movements minute in character (the "microkinesis" of Dr. F. Warner), incessant during waking hours, is the characteristic of healthy infant life. If these movements be absent or excessive, we may reasonably suspect something wrong with the nervous system, and predicate mental irregularities. In the former case we shall find a dull, vacant expression, sometimes associated with imperfect reflex, so that even the function of sucking is not properly accomplished. In the latter there is over-mobility, perhaps nystagmus, and twitching movements of the muscles of the face. A general tremor is also sometimes met with. As

* See Plate I., facing p. 12.

indications of mental deficiency, we must, of course, be guided by the extent of the departure from the normal in one direction or the other. As the age of the child increases, we must carefully watch the evolution of its senses, and mark deficiencies of touch, sight, hearing, etc. At a later stage, the absence of attempts at speech, when the hearing is not affected, will, of course, be of much value as a diagnostic sign. So also will be lack of muscular co-ordination and consequent inability to walk, independent of paralytic affection.

4. **Defects in Nutrition.**—The emaciated, wizened features of the slum baby, so often seen in the children's wards of East-End hospitals, furnish an extreme example of these defects. This may to some extent arise from injudicious feeding; but there is undoubtedly a congenital state of malnutrition, evidenced, for instance, in cases of inherited syphilis. Persistent defects of nutrition, in spite of good feeding, are symptomatic of defect of original constitution, and are not unfrequently associated with mental deficiency. This fact was remarked by Dr. Warner in his inspection of Poor Law Schools, where, notwithstanding good feeding, the tendency to low nutrition was in greater ratio than with ordinary school children.

To sum up, we shall find aid in diagnosing the CONGENITAL character of mental deficiency by noting abnormalities in the form and shape of head, and the condition of the cranial sutures; by looking for the physical stigmata, if not of degeneration, at any rate of arrested development; and by marking signs of abnormal nervous action and a constitutional tendency to imperfect nutrition. The occurrence of *asphyxia neonatorum*, the absence of a healthy cry,

defect of reflex action and of grasping power, imperfect reaction to light and sound, absence or excess of spontaneous movement, and (as time goes on) inability to notice objects or to fix the attention, with tardiness of attempts at speech and at walking, are some of the symptoms marking the child as different from other children. As a definite guide we may state the time at which certain functions develop in a normal child; there are, however, great variations even in healthy children, so that considerable latitude must be allowed. Touch, taste, and probably smell are more or less developed at birth, at which time the infant should present a developed voice, and cry vigorously. The power of hearing is soon established; the eyes are sensitive to light from the first, but there is a lack of power to interpret the images received. By the fifth or sixth week, however, objects are recognized, and at the same time the child, whose features have previously been more or less passive, begins to smile. From two to three months is the time at which it can sustain its head without assistance, though this is done in a vacillating way till the fourth or fifth month. By the sixth month it can sit up with ease, and accomplish many movements with its arms, hands, and fingers, and enjoy playthings. Between the seventh and ninth months it may be put on the floor alone, and can amuse itself. When from ten to twelve months old, it begins to crawl, and is generally able to walk at some time between the twelfth and sixteenth months. When twelve months old, the child begins to enunciate single words, and at eighteen months or two years learns to form short sentences.

Cases of WORD-BLINDNESS and WORD-DEAFNESS are often not recognized till the child is of school age;

the statements in the last chapter about these defects suffice for the diagnosis.

NON-CONGENITAL cases are differentiated by the absence of the signs of original defect: by a history of normal condition in infancy until the occurrence of some serious accident, illness, or shock, which was followed by mental enfeeblement. Caution is needful in accepting the statements of parents on these matters, but it must be remembered that a certain number of cases, not obviously suffering from congenital defect, are born with brains so unstable as not to be able to withstand the stress of life, and these may break down at a crisis of child development, or after a comparatively slight injury which would leave a normal child unharmed.

The DIAGNOSIS and PROGNOSIS of the various types of mental deficiency are so closely connected that it will be convenient to consider them in common. First we may remark, with regard to the broad division into congenital and non-congenital cases, that the prognosis in the former is, as a rule—contrary to the popular idea on the subject — better than in the latter. The fact is that in the one there is merely defective development, and this, under favourable circumstances, may be fostered and promoted; in the other there is actual lesion of brain tissue, more or less irremediable. Superficial appearances are in favour of non-congenital cases, for the others are handicapped by ill-formed and sometimes repulsive physical features; yet our experience is quite in accord with that of the late J. Langdon-Down,* that "the prognosis is, contrary to what is so often thought, inversely as the child is comely, fair to look upon, and winsome." There are, however,

* *Obstet. Trans.*, vol. xviii.

a few cases of mild traumatism, and even of post-inflammatory lesion, in which a more cheerful view may be taken, especially in these days of brain surgery.

In congenital cases Dr. Lapage has shown that the greater the mental deficiency the later is the child in learning to walk and talk, as a rule. The age, therefore, at which these accomplishments were acquired are facts of considerable importance in prognosis. A comparison with the tabulated facts of the development of infants we have just given (p. 97) will often be useful.

Passing now to some of the typical groups, let us first take the small heads, those with greater or less degree of **Microcephalus.** The prognosis may be said to be, generally speaking, favourable or otherwise, in proportion to the size of the head. With heads under 18 inches in circumference the manifestation of mental power is usually so small as to come under the category of idiocy ; between 18 and 19 inches the cases may be designated as imbecile ; and from 19 to 20 inches is not an uncommon measurement in cases of mere " feeble-mindedness." There is hope of improvement under training, especially for the higher grades of this type. Dr. Shuttleworth had under training for four years a mentally feeble boy whose head circumference increased during that time from 19 to 20½ inches. As the sensorial and muscular powers are usually good in microcephalic cases, the better class of such patients may be taught useful industrial work, and we have known a girl with a head of 18 inches employed as an assistant dormitory maid, and a boy with a head of 19 inches helping intelligently in a bakehouse. The physical health of microcephalic children is usually not amiss, and under favourable circumstances they may live to adult,

and even advanced, years. Some simple occupation, not requiring head-work, is the goal for such, the mental being limited by the cranial capacity.

But, as old Fuller quaintly puts it, though " heads are sometimes so little that there is no room for wit, they are sometimes so long that there is no wit for so much room." We have already remarked that *long* heads do not at all necessarily go with mental deficiency—sometimes the reverse ; and if Fuller had written *large* heads instead of *long*, it would have been more in accord with our experience. We refer, of course, to the **Hydrocephalic type**, the features of which have been already referred to.* Here we may add that some diagnostic care is necessary to distinguish this type from that of the **Hypertrophic** heads occasionally met with. In hypertrophy the circumference is less than that in hydrocephalus, and the increase in size is most marked just above the superciliary ridges, not at the temples. The general form of the head is not so globular, but rather piled up towards the vertex. Hypertrophic change is sometimes associated with rickets ; there is often complaint of headache ; sometimes encephalitis and acute mania supervene. The prognosis of hypertrophy of brain is consequently unfavourable, whereas in hydrocephalus, after the acute symptoms have subsided, the prospects of improvement under judicious training are considerable.

Cases of **Oxycephaly,**† or, as it is better called, " tower skull," are readily recognised by the large proptosed eyes, absence of supra-orbital ridges, and the dome-shaped mound rising up from the forehead and separated from the temples by shallow

* See Plate VI. (opposite p. 63).

† See Plate VII. (opposite p. 64).

furrows. André Patry, in his original monograph,* stated that the intelligence of patients with this cranial abnormality is usually normal. This was not so, however, with the case—a man aged twenty-three —described by Dr. Rosa Ford in the *Ophthalmoscope*, April, 1907, nor with the boy shown by Dr. W. A. Potts, at the meeting of the Society for the Study of Disease in Children in Birmingham, in June, 1908. As the mental deficiency is, however, usually slight, it might be overlooked unless the patient were examined by a psychological expert.

With regard to the so-called "**Mongol**" type,† the physiognomy, the form of the head, the furrowed tongue with hypertrophied papillæ, the fissured lips, and the harsh condition of skin and mucous membrane, are quite characteristic; and the mental condition is equally so. The powers possessed by such children of mimicry are often extraordinary; their love of music great; their idea of time as well as tune remarkable, so that they are apt at drill and dancing. In some ways, therefore, they are full of promise, but they seldom accomplish much, and the ultimate outlook, both on the mental and physical sides, is really unsatisfactory. Something may, however, be expected from a favourable environment, and cases are to be seen, sheltered in institutions, of mongolians over forty years of age. In adult life there is less peculiarity of appearance, for the physical characteristics of the type tend to be less marked as age advances. Varied gradations are met with, from the mentally feeble child with the slight "mongol"

* *Contribution à l'Étude des Lésion Oculaires dans les Malformations Craniennes spécialement dans l'Oxycéphalie*, par André Patry, Paris, 1905.

† See Plates VIII., IX., X. (opposite pp. 65, 66, 67).

taint to the idiot whose obliquely-set almond-shaped eyes are very suggestive of the "heathen Chinee." Amongst the higher grades fairly satisfactory results of mental training are sometimes obtained. Indeed, we know youths of the mildly "Mongol" type who, after appropriate education, pass muster with their brothers and sisters. Simple imitative arts, such as writing and drawing, are acquired without much difficulty, but the coarsely-convoluted brain is unequal to higher intellectual operations, and calculation is a stumbling-block. Unskilled industrial occupation, such as that of the garden and farm, may be followed, but the clumsy ill-formed fingers militate against success in mechanical work requiring fine adjustment. From the physical side the prognosis of such cases is not good. They are generally delicate and very susceptible to cold, being apt to suffer much from chilblains. They are prone, moreover, to mucous catarrhs of the digestive and respiratory tracts, and the majority die of phthisis before arriving at maturity. They are also liable to congenital heart disease, and some die young from this cause. On post-mortem examination in such the foramen ovale is usually patent, and there may be in addition some defect in the interventricular septum, as described by Dr. Guthrie in the discussion on Dr. Archibald Garrod's communication to the Clinical Society.* Cases with this defect are not often seen in institutions, as they usually die before the age for admission.

Of the cases in which the stigmata of **Tubercle** are strongly marked, we may say that the prognosis varies with the intensity of the taint. Much depends upon favourable environment, and it is remarkable how such cases improve, both mentally and physi-

* See *British Medical Journal*, October 22, 1898, p. 1255.

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PLATE XIV.

FIG. 1.—GIRL (R. A. A.).

FIG. 2.—BOY, SHOWING ATHETOSIS (R. A. A.).

BIRTH-PALSY.

To face page 103.

cally, when withdrawn from insanitary slums and placed under good hygienic conditions, especially when employed in outdoor work in pure country air.

In cases of mental deficiency associated with **Birth-palsy**,* the history of the case, the occurrence of convulsions during the first few days after birth, and the liability to athetotic movement, distinguish this form from that associated with **Infantile Hemiplegia.** In the latter there is a history of convulsions later in infancy, with power suddenly lost on one side; and when the paralysis begins to improve, spastic contractures are left, and there is the characteristic hemiplegic gait. In the first class of cases—those following birth-palsy—the mental deficiency is often more apparent than real, and the patients improve wonderfully under appropriate training. The athetotic movements disqualifying them from ordinary use of the hands may be overcome by suitable finger exercises (such as will be hereafter described), and as considerable power of will exists, the patient will often be able to co-operate with the doctor in trying to combat his infirmities. We have repeatedly seen children of this type, at first unable to hold a pencil, develop into admirable draughtsmen; indeed, the graphic faculty seems to be frequently good in these cases. Intricate macramé patterns have also been worked out by them, and delicate wood-carving done. Dr. Shuttleworth once had under his care a patient of this type, J. B., who at twelve years of age could not read or write, and could do nothing beyond washing and dressing himself, which he accomplished with difficulty, owing to athetosis. Two years later he was able to read, write, and draw a little, and could make simple articles in the joiners' shop. After

* See Plate XIV. (opposite p. 103).

ten years' training he was an excellent joiner, and gained prizes for wood-carving in Arts and Crafts Exhibitions. Five years later he had become the instructor in wood-carving. A recent report states that "he is able to explain his methods; is an accurate and artistic wood-carver himself; makes his own designs for panels."*

Various grades of mental defect from simple feebleness to crass idiocy are associated with infantile hemiplegia, and the prognosis varies with the degree. In such cases speech is often bad, and this fact is often misleading. It must be remembered that they have considerable will-power, and will persevere to overcome their defects. Such cases have usually to be attacked from the physical side, muscular atrophies and contractions being subjected to electrical treatment and massage; and in the milder instances considerable improvement, both physical and mental, may be anticipated.

The features of **Sporadic Cretinism** are so characteristic as when once seen to leave little doubt as to diagnosis, which can often be made by the third month. Dwarfing, both of body and mind, with slow reaction and response, a loose baggy skin, tumid belly, bowed legs, broad, squat hands and feet, are some of the general characters.† Then there is the squarely expanded head, the broad, flushed cheeks, the indented "pug-nose," the pouting lips, and the protruding tongue, which make up a physiognomy when once seen never forgotten.‡ Investigation shows deficiency or absence of the thyroid gland, and in many cases supraclavicular fatty tumours. The prog-

* See Plate XV. † See Plate XI., and Fig. 1 on p. 68.

‡ For table of characteristic differences between Cretinism and Mongolism, see p. 69.

PLATE XV.

WOOD-CARVING, DESIGNED AND EXECUTED BY J. B., ROYAL ALBERT ASYLUM.

To face page 104.

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nosis of such cases was, till within recent years, most unfavourable. Now, thanks to the experimental researches of Victor Horsley, Schiff, and others, their successful treatment by administration of the thyroid gland is an everyday occurrence. Physical and functional development proceed at a rapid rate, and the mental hebetude and slowness characteristic of such cases are usually transformed into a vivacity and activity strangely contrasting with the previous condition.

In rare cases, however, while the bodily symptoms disappear under treatment, the mental condition does not improve. Dr. Tredgold has an interesting account of two such cases in his book "Mental Deficiency." Some observers think that if a normal condition is to be attained, treatment must be begun early—at any rate, not later than twelve months. Less marked improvement may, however, be looked for even when thyroid medication is resorted to only in later years. Indeed, Dr. Shuttleworth has treated with considerable benefit a man of forty-two, who at that age was only 3 feet 1 inch high, was quite imbecile, and suffered from lateral curvature of the spine. After three years' thyroid treatment Dr. Shuttleworth was able to report that he "has been transformed from an inert mass of unintelligent matter to an individual taking some interest in his surroundings, and able to move about and investigate them for himself. His general health has improved, and his capacity for happiness and enjoyment of life has notably increased."

It would seem, however, that to secure lasting benefit the treatment must be permanent; relapse is apt to ensue if the thyroid is discontinued.

A passing reference must be made to the rare class

of **Achondroplasiacs,*** mistaken sometimes for cretins, but not necessarily mentally deficient. These are usually intelligent but short-limbed dwarfs, distinguished from cretins by their "trident hands," healthy skin and copious growth of hair, and also by the absence of "fat pads," the swollen eyelids, and characteristic mouth and tongue.

The chief characteristic of cases **Primarily Neurotic** is the impression they give of weakness, mental and physical; there is little power of attention. Asked to look at a fixed object held up in front, the eyes will quickly wander. Children of this type are slackness personified. If told to extend the arms in front, their response is feeble; the arms are not straight nor raised to the shoulder-level. Warner's "weak hand-balance" is noticed. "The wrist droops, the bones of the palm of the hand are somewhat folded together, while the thumb drops and all the fingers are slightly bent." Often the right hand is kept at a lower level than the left. This type is not infrequently blended with others. Cases of this class always do better when withdrawn from home influences, which are prejudicial (the common neurotic taint of parent and child often interacting injuriously). Placed under judicious management in healthy surroundings, much good may be done by suitable drill and manual exercises in overcoming the twitchings and nervous movements common in these cases. It must be remembered that such individuals are weak all through, and that powers of control are with difficulty established and maintained. There is a special danger of their becoming inebriate, if

* See Symington and A. Thomson, *Lab. Rep.*, R.C.P. Ed., 1892, vol. iv., p. 238; also F. J. Poynton, *System of Medicine*, Allbutt and Rolleston, vol. iii., p. 117.

not carefully guarded. Slight cases of this group are not very rare, and are often a source of continual anxiety and distress to their relatives and friends.

The **Simple Congenital** type is distinguished by the characteristics described in the last chapter; the intelligence of this group is poor, but their prospects of life and health are comparatively good.

With regard to **Eclampsic** cases (the history of which will help us to a diagnosis), the prognosis varies with the severity of the consequences of the fits, but as a rule is not very favourable.

Much the same may be said with regard to **Epileptic** cases. Dr. W. Aldren Turner* has shown that in epileptics mental impairment is more likely to be present when there is an hereditary neuropathic tendency. His records from the Chalfont St. Peter colony also show that while some epileptics show no mental enfeeblement after thirty years or more, the majority, as time goes on, develop a bad memory or more serious sign of failure, 29·1 per cent. becoming actually demented. Where epilepsy is associated with the lower grades of idiocy, the probability of organic lesions renders the prognosis specially unpromising. In milder cases of mental enfeeblement associated with epilepsy, the successful treatment of the epilepsy is followed by considerable mental improvement, and should the cessation of fits be permanent, the mental deficiency may gradually disappear.

Epileptic children must be educated according to their individual mental capacity. Dr. Shuttleworth found that of the 470 epileptic children in London submitted to him by the educational officers for examination and report—

(1) 17 per cent. were cases of mild epilepsy, with

* *Epilepsy*, Aldren Turner, 1907.

no obvious mental impairment, and were suitable to continue in the ordinary schools.

(2) 27·5 per cent. showed some degree of mental impairment, and were preferably educated in special classes, as, owing to their defective memory and the lesser degrees of mental deficiency, they were unsuited to compete with normal children.

(3) 40 per cent. were capable of being educated along special lines, but, owing to the frequency and severity of the seizures, additional supervision was necessary. This group was suitable for education in residential schools or colonies.

(4) 15·5 per cent. were epileptic imbeciles or dements, and were incapable of education. These required care in an idiot asylum.

According to Dr. W. A. Turner, a "*cure of epilepsy* may be defined as arrest of the seizures for a period of eight or nine years, when it will be found that from 10 to 12 per cent. of cures may be expected."

Syphilitic cases* may be distinguished by the history and signs of inherited syphilis; though, as we have already pointed out, the taint is undoubtedly a factor in many cases of mental deficiency where its external manifestations are not obvious. Degenerative changes due to this cause may, indeed, manifest themselves early in life, and give rise to cranial osteitis, meningeal inflammations, and eclampsic, epileptic and paralytic symptoms so often associated with mental defect in children, and frequently assigned as its cause, though more correctly to be regarded as links in the chain of causation. But the most characteristic type of mental degeneration in the young associated with hereditary syphilis is that

* See paper by G. E. Shuttleworth, *Brit. Jl. of Children's Diseases*, April, 1908.

designated by Dr. Clouston in 1877 " juvenile general paralysis " (or by Dr. Judson Bury as " juvenile dementia "), in which a breakdown (mental and physical) occurs at the period of second dentition or advent of puberty, leading to a fatal issue in a few years. Such cases are found not to be so rare in asylums as was formerly thought, and Dr. Mott has tabulated the histories of twenty-two in volume i. of the *Archives of Neurology*. It would appear from this table, as well as from a paper in the *Practitioner*, January, 1908, in which an aggregate of forty cases are dealt with by the same author, that in at least 80 per cent. of these cases there was evidence either of a syphilitic family history or of the presence of syphilitic stigmata (in several instances, of both), and he states his opinion that, " though there may be many exciting causes, the predisposing cause of this disease (juvenile general paralysis) is nearly always hereditary syphilis," thus agreeing with the conclusions of Thiry, Alzheimer, Mendel, and other Continental pathologists, that inherited syphilis plays a predominant rôle in its etiology. In our experience, syphilitic cases do not respond much to education. Even if they survive the second dentition and puberty without changing for the worse, they do not, as a rule, improve in any way.

In the last chapter we gave a full account of the pathology of the family type of infantile cerebral degeneration designated **Amaurotic Idiocy.** Here we need only say that the diagnosis depends on the onset during the fourth month, or thereabout, of weakness of the muscles and back in a previously healthy infant, with difficulty of vision. The ophthalmoscope reveals changes in the macula lutea, while

later there is optic atrophy and total amaurosis. As the disease progresses, the child is unable to sit up. All the muscles become weak. At a later stage there is muscular atrophy and emaciation. The senses of hearing and taste are preserved, and the thoracic and abdominal viscera remain healthy. The prognosis is at present hopeless, the cases succumbing in from one and a half to two years.

In the diagnosis of **Traumatic** cases the history of a fall or injury to the head must be accepted with discrimination ; but falls from careless nurses' arms, from an overturned perambulator, down stone steps, and severe blows on the head, are not improbable causes. The presence of external swelling or hæmorrhage, or the occurrence of fits soon after the accident, will be confirmatory evidence. The prognosis varies with the severity of the injuries and their consequences ; and the influence of heredity to nervous disease must not be overlooked. We have seen mild traumatic imbecility entirely recovered from in the processes of growth and development ; and the modern resources of cranial surgery make the prognosis of this class of cases more favourable than formerly

Of **Emotional** cases, caused by shock and fright, there are many degrees. The history, of course, serves for their recognition, and the absence of the features of congenital abnormality, with persistent nervousness, and sometimes a peculiar scared expression, will help us in the diagnosis. Much good may be done by placing such a patient in a good environment with suitable training, which may gradually give him confidence in himself ; and we have known children who have been victims of shock become, after special education, fairly useful members of society. Exposed to the rugged ways of public

schools, where they will be jeered and scoffed at, there is much risk of mental deterioration.

Post-febrile or **Inflammatory** cases are similarly diagnosed by the history, and the absence of congenital defect. Speaking generally, the prognosis is not favourable in this class of cases, though, of course, depending upon the amount of damage the brain has sustained or the degree of atrophy consequent on meningeal thickening. In some cases irremediable lesions may have been left; in others the arrest of development from failing nutrition may, under favourable circumstances, be averted.

Toxic cases are recognised by ill-effects occurring in a previously normal child dosed with alcohol or opium. The possibility of the presence of these and other powerful drugs in patent medicines, as described in the last chapter, must not be overlooked. The lesions are of an atrophic character, and good results may follow withdrawal of the poisons and the substitution of nourishment appropriate to the child's age.

Whilst setting forth the leading characters of these several groups as an aid to diagnosis and prognosis, it is not pretended that we can refer all cases of mental deficiency to a single type. The majority, indeed, are of **Mixed Types**; but experience aids us in distinguishing and assessing the value of one factor and another in their combinations. Thus traumatism combined with a neurotic family history is less hopeful as regards mental improvement than when the history is good. A syphilitic element makes the outlook bad, and the physical prognosis of the mongolian with marked phthisical heredity or some cardiac lesion is most unfavourable.

The difference between **Idiocy** and **Imbecility** is one of degree and not of kind, the former designation

being applied to the lower grades, the latter to the higher grades of marked mental defect, whether congenital or acquired. The Royal College of Physicians of London suggested in their evidence to the Royal Commission on the Care and Control of the Feeble-minded the two following definitions, and these the Commission have adopted: **Idiots** are "persons so deeply defective in mind from birth or from an early age that they are unable to guard themselves from common physical dangers such as, in the case of young children, would prevent their parents from leaving them alone." **Imbeciles** are "persons who are capable of guarding themselves against common physical dangers, but who are incapable of earning their own living by reason of mental defect existing from birth or from an early age." **Mental feebleness** ("**feeble-mindedness**" in the modern English sense) is distinguished by departure from the normal mental development less marked than the above. The Royal College of Physicians have defined the **Feeble-minded** as "persons who are capable of earning a living under favourable circumstances, but are incapable from mental defect existing from birth or from an early age (*a*) of competing on equal terms with their normal fellows; or (*b*) of managing themselves and their affairs with ordinary prudence." The Royal Commission suggest that this should be slightly altered so as to read "persons who may be capable of earning a living under favourable circumstances, but are incapable from mental defect existing from birth or from an early age (*a*) of competing on equal terms with their normal fellows; or (*b*) of managing themselves and their affairs with ordinary prudence"; and they assume that the "prodigal" and the "facile"

are included within the term. Considerable care must be exercised at an early age in discriminating this condition from retarded mental development amounting to no more than mere "backwardness."

In really doubtful cases a definite opinion must be postponed, and the child's development carefully watched. The best estimate will be obtained by comparing the patient with a normal child of similar age. Thus tested, a boy of ten will sometimes be found on an intellectual level with the ordinary child of five; and if he has had equal advantages with the latter, we may fairly conclude that he is "mentally feeble." The physical accompaniments of this state, previously alluded to, such as developmental defects, nerve signs, and low nutrition, will also aid in the diagnosis. There may often be detected in these cases by the practised eye indications of the typical forms—such as the Microcephalic, Hydrocephalic, Mongol, etc.—which are more pronounced in cases of actual imbecility; while tubercular, neurotic, and, we may add, rachitic, affections are noticeable in a large number of children whose mental condition is merely sub-normal. These signs, in conjunction with considerations of heredity, are of great value in the diagnosis of constitutional defect of intelligence of a minor kind, and also in the prognosis.

Unfortunately, there is sometimes associated with mental defect, particularly when not early subjected to proper training, **moral weakness,** apt to give much trouble in after-life. As Dr. Blandford has well stated in his Lumleian Lectures at the Royal College of Physicians:

"And first, of those who, through congenital defect, or as the result of disease in early life, are mentally deficient—not idiots, but weak-minded imbeciles—

children in mind throughout life. They come before us in various ways. Though children in mind, they are very often men and women in wickedness and vice; and it may be necessary to place them under restraint, or to protect their property from being squandered and themselves from being robbed. I know no class over whom controversy is so likely to arise, or where we may have greater difficulty in forming a diagnosis. They are not idiots; many of them have acquired a fair amount of education, can construe a Greek play, or master a proposition of Euclid. Their memory is excellent, and we cannot compare their condition with a former one, for they have never been any better, so that this test fails us. They have no delusions or hallucinations, and are not insane in the ordinary sense of the word. With regard to many there is no difficulty. When a man or woman of forty submits to be treated like a child of ten—to be taken out and amused, and to have sixpence a week pocket-money, we have not much difficulty in forming an opinion. But the development of others is not so low; yet they are deficient in reason and judgment, and often in conduct. There is a tendency to low and depraved habits, to brutish and sensual enjoyment, to low company amongst whom they are of more importance, and if remonstrated with they show an absolute disregard for truth or for right behaviour. Lawyers will defend these patients and say that they are not insane, and the celebrated Wyndham case shows what can be done by their aid. In examining any such individual we must consider his conduct in regard to his environment and bringing up. What might be passed over in the lower walks of life is in the higher evidence of a degraded mental state. Every case must be judged

by itself, and the question must be asked, Is this person able to take care of himself and his affairs? But to sign a certificate is often very difficult, as we may not ourselves witness the insane conduct, all of which we arrive at only by hearsay. It is not to be forgotten, however, that imbeciles are very prone to display violent explosiveness of their nerve centres, and this is specially likely to happen as they advance from the period of puberty to adolescent life."*

The connection between criminality and mental deficiency is a subject of vast social importance. It is discussed in an important section, "Mental Defect and Crime," of the Report of the Royal Commission on the Care and Control of the Feeble-minded. To those interested in the subject we would commend the works of W. D. Morrison, Letchworth, Talbot, Havelock Ellis, G. H. Savage, and others, and the reports by Macdonald to the United States Bureau of Education. Lydston's "Diseases of Society" and Mercier's "Criminal Responsibility" are two of the most recent textbooks. Many valuable papers—notably one by Dr. Barr—are to be found in the Proceedings of the American State Committees on Charities and Corrections.

We cannot go into the whole of this difficult subject here, but must explain that, while the majority of the feeble-minded are inclined towards immoral and antisocial conduct, only a small proportion of them are really "moral defectives," or, as they are perhaps better called, "moral imbeciles." Take the ordinary feeble-minded child or youth from the bad environment into which he so readily drifts, and place him in healthy and proper surroundings with good discipline; in a short time he will be quite

* *Lancet*, April 6, 1895, p. 857.

a different creature. Such has been the experience at the Sandlebridge Schools of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded. Miss Dendy, the Hon. Secretary, in answer to our inquiries, has kindly written to say: "I am, however, as you say, sure that in the majority of cases children who have been supposed to be moral defectives do not merit that title at all, and do very well as soon as they are removed from the surroundings which have prompted their evil doings;" adding: "Many children have been sent to us at Sandlebridge as incurably wicked, but we have had to discharge only one youth. He was more lunatic than feeble-minded, or, rather, I should say lunacy supervened on weakness of mind. Occasionally we have to isolate a child for a time, so that it may not contaminate the other children; but, luckily, bad habits are as soon forgotten as good ones." Similar testimony is forthcoming from the Sandwell Hall Institution for the Training and Permanent Care of the Mentally Defective, near Birmingham, where the Case Selection Committee have not so far found it necessary to refuse admission on receiving accounts of outrageous conduct. The true moral imbecile is, however, a most difficult type to deal with. According to the Royal College of Physicians of London, a **Moral Imbecile** is a "person who displays from an early age, and in spite of careful upbringing, strong vicious or criminal propensities, on which punishment has little or no deterrent effect." The Royal Commission on the Care and Control of the Feeble-minded have amended this definition so as to read "persons who from an early age display some mental defect coupled with strong vicious or criminal propensities on which punishment has little or no

deterrent effect." As, however, we have had experience of moral defectives who exhibited no other mental defect, or, at any rate, no other that we could detect, we cannot approve the Commission's amendment. As a matter of fact, we consider the most satisfactory definition to be that put forward in his evidence to the Commission by Sir James Crichton-Browne: "The **Moral Imbecile** is a person who, by reason of arrested development or disease of the brain dating from birth or early years, displays at an early age vicious or criminal propensities which are of an incorrigible or unusual nature, and are generally associated with some slight limitation of intellect."

As an illustrative case, we may refer to a "youth aged nineteen years, the son of ordinary respectable people. He was educated at an ordinary school, and subsequently at a technical school, where he exhibited special talent, especially for drawing. He writes an exquisite hand, and is an expert in photography. He has had several situations, usually as a clerk, but if he has not been summarily dismissed, he has always given them up after a few weeks' work. He was a thief from an early age, and has frequently been caught in the act at school and elsewhere. He has several times been in the hands of the police, and has served a term of imprisonment. He is utterly depraved; he lies in bed in the morning, and spends all the money he can get on drink and vice. He steals from his own family, and pawns the clothes with which he is provided. Although he will not do ordinary work, he spends hours in his favourite hobby of enlarging photographs. This he does, not in the usual way, but in a manner suggestive of a mental twist, for he makes a large pencil-drawing of a small photograph, and then photographs the large drawing

So accurately is this done, that anyone would believe the enlargement to be effected in the usual way. He is certainly abnormal, for he has a narrow forehead, suffers from an extreme degree of myopia, and has a slightly dilated heart."

Essential features in the diagnosis are the consideration that the crime is out of all proportion to the temptation, that the moral shortcomings are not to be explained by training and environment, and are not influenced by ordinary discipline and punishment. There is usually some other sign of defect, but this is not necessarily of an intellectual nature. Often there is a certain eccentricity of character and a dislike of family habits; there is usually a constant tendency to lying, together with bad sexual habits, and cruelty towards companions and animals. The crime of arson is sometimes an overpowering temptation. These cases are very difficult to deal with, though something may be accomplished by hygiene and prolonged training. Fortunately, real moral imbeciles are not common. It is quite certain that they form a very small proportion of the inmates of prisons and other places of correction. When Dr. Potts conducted an investigation for the Royal Commission on the Care and Control of the Feeble-minded into the number of the mentally defective in the parish of Birmingham, he reported, after examining 403 prisoners, of whom 44, or 10·9 per cent., were defective, that "not a single moral defective was encountered." After regularly visiting the Stafford prison in connection with a similar inquiry at Stoke-upon-Trent, he stated: "It was particularly noticed that there were but few moral imbeciles." We are not acquainted with any statistics showing the proportion of moral

imbeciles in a large group of feeble-minded. Dr. Potts* carefully studied during a series of years ninety-seven consecutive cases admitted to a Magdalen Home. He found that thirty-seven of these were defective in some way, and that of these, seven might be fairly described as moral imbeciles. These seven morally defective girls were sharp and intelligent, but without any sense of honour or modesty, and were insusceptible to moral and religious training, thereby differing markedly from the majority. Nothing could restrain them from lying and from stealing from their companions. As we have already indicated, the prognosis in these cases is bad. Short terms of training are quite useless, but when firm and judicious training can be continued for a long time in proper surroundings, improvement is sometimes effected. It is not impossible that there is a kind of moral centre in the brain, and so these cases, or some of them, have been compared with cases of agraphia or aphasia. We have, indeed, seen moral weakness develop after a head injury. If a portion of the brain is poorly developed at birth, or destroyed at a later date, it is not likely to be replaced by healthy tissue; after a long interval other portions may be educated to assume its functions. For instance, the child without a conscience may be taught that dishonesty is unpopular, and does not pay.

* "The Problem of the Morally Defective," *Lancet*, October 29, 1904.

CHAPTER VII

THE MEDICAL EXAMINATION OF CHILDREN REQUIRING SPECIAL INSTRUCTION

PREVIOUS chapters having dealt with principles upon which are based the classification, diagnosis, and prognosis of cases of mental deficiency, it is thought that a practical exposition of methods found serviceable in the actual examination of children with a view to their special instruction may here be inserted with advantage. In Chapter III. reference has been made to the provisions of the Elementary Education (Defective and Epileptic Children) Act of 1899, and it is interesting to note that this Act had at the date of the last official list been adopted by 43 of the educational authorities in England and Wales—mostly in the urban educational centres—and that about 10,000 mentally defective children were receiving special instruction under its provisions. In Scotland, under the Defective Children (Scotland) Act of 1906, provision is made for about 1,800 " defective or epileptic children " in special classes. In Ireland, under the Act for providing better education for afflicted children, little (if any) progress seems to have been made. In most cases the instruction is given in day-classes (" special schools "), but in England two large boarding-schools (recognised by the Board of Education) have been established, the first at Sandlebridge, Cheshire, by the Lancashire and Cheshire Society for

the Permanent Care of the Feeble-minded; and the second at Sandwell Hall, West Bromwich, through the generosity of the Rev. H. N. Burden, a member of the Royal Commission. Mr. Burden has also opened at Stoke Park, near Bristol, a colony for mental defectives, including a school for children. The National Association for the Feeble-minded is collecting funds for the establishment of an industrial colony (which will comprise resident schools for children) recently opened near Tonbridge. A small boarding-school for boys (Littleton House) has been founded by Miss Townsend at Uxbridge, and there is a residential school at Hillingdon, Middlesex, for Roman Catholic Children. Mentally defective children may also be "boarded out" under the regulations of the Board of Education.

The Examination of Children deemed to be Defective.—By Section 1 of the Act of 1899 school authorities are authorised to ascertain "what children in their district, not being imbecile, and not being merely dull and backward, are defective—that is to say, what children, by reason of mental or physical defect, are incapable of receiving proper benefit from the instruction in the ordinary elementary schools, but are not incapable, by reason of such defect, from instruction in such special schools as are in this Act mentioned, and with that object a certificate to that effect by a duly-qualified practitioner approved by the Education Department (Board of Education) shall be required in each case." It also provides for the medical examination from time to time of children dealt with under the Act.

The form of certificate (as used in examinations for admission to special schools) prescribed by the Board

of Education with regard to defective children runs as follows:

I....., a duly qualified practitioner approved by the Board of Education, certify that the following Children, not being Imbecile, and not being merely dull or backward, are, by reason of (1) Mental or (2) Physical Defect, incapable of receiving proper benefit from the instruction in an ordinary Public Elementary School, but are not incapable, by reason of such defect, of receiving benefit from instruction in a Certified Special Class or School.

No.	Name.	Age.	School attended (or Parents' Address).	Mental or Physical Defect.

It will be seen that the name, age, and previous school of each child is set forth, and whether the defect is mental or physical, but no statement of the ground upon which the medical practitioner bases his opinion is required by the Board, who, however, issued with their original circular on the subject to school authorities a suggestion as to "form of medical report," to include observations on—

1. *General Aspect and Expression.*

2. *Physical State.*—General health and nutrition; form and size of head; form of palate; any physical or nervous peculiarities.

3. *Mental State.*—Response, slow or ready; educational attainments, etc.; peculiarities.

4. *Diagnosis.*—Degree of mental defectiveness.

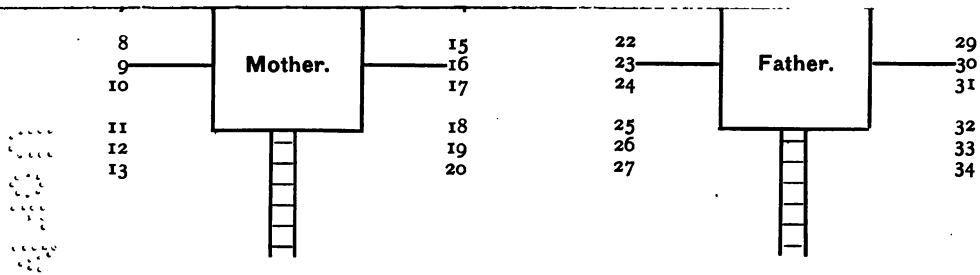
5. *General Observations as to Line of Training indicated.*

CITY OF BIRMINGHAM EDUCATION COMMITTEE

Name **School** **Address**

1. **Sex** 2. **Date of Birth** 3. **Height** 4. **Type**

5. **Head**—i. Circumference. ii. Antero-Posterior. iii. Transverse.



1, 2, 3 = Patient's sisters.
4, 5, 6 = Patient's brothers.
7 = Mother's mother (patient's grandmother).
8, 9, 10 = Mother's aunts.
11, 12, 13 = Mother's sisters (patient's aunts).

14 = Mother's father.
15, 16, 17 = Mother's uncles.
18, 19, 20 = Mother's brothers.
21 = Father's mother.
22, 23, 24 = Father's aunts, etc.

Diagrams founded on Scheme by Dr. Pasmore.]

[*Between pages 122 and 123.*

This form (Board of Education, **42 A.**, D. E.) does not appear to have been very widely adopted (and in some cases other forms more conveniently arranged on cards have been drawn up), but most medical officers make a note of the reasons of their diagnosis in the school record-book, where subsequently is added (usually by the teacher) as much of the family history as can be obtained. In London a comparatively simple card is used for recording the physical and mental condition of the child on admission to the special school; at Birmingham the card (originally drawn up by Dr. Potts) contains also headings bearing upon environment and family history, and (by kind permission of the authorities) is reproduced.

Some modification in the routine of the examination of children presented for admission to the special school may result from the general medical inspection of schools now happily established under the Education (Administrative Provisions) Act of 1907. But the following outline of the *modus operandi* hitherto employed may be serviceable to our readers.

Arrangements having been made by the authority for the attendance of the children reported by the teachers (and referred by the medical inspectors) as mentally exceptional, together with that of the parents and teachers concerned, the medical examiner commences by observing the child's aspect as a whole, his attitudes, gait, and facial expression. The condition of bodily growth and general development, of health and of nutrition (with particulars of height and weight if practicable), is then noted. Next to be looked for are special physical abnormalities—*e.g.*, in form and size of head, in features, in sense organs, in teeth, tongue, palate, and tonsils—

noting particularly if there is evidence of post-nasal obstruction from adenoids, etc. The hand is carefully scrutinised, both as to form, balance, and movement of the fingers (the last in relation to power of imitative movement) : its general balance when extended is also observed. Eye movements are next tested. Evidence of irregular nervous action—*e.g.*, in the frontal muscles (corrugation), the eye-balls (nystagmus), the muscles of the face and of the hands (tics and twitches)—is also investigated. Passing to the mental condition, one tries to put the child at his ease, and to ascertain by familiar conversation—*e.g.*, enquiries as to names and numbers of brothers and sisters—whether he is slow or ready (perhaps over ready) in response, incidentally noticing any defects of speech and articulation that may exist. Then comes the consideration of educational capability and attainments, and in appraising the latter, age and opportunities of education must, of course, be taken into account. The Board of Education prescribe a schedule—Form **42 B.** (D. E.)—to be filled up by the teacher of the elementary school, showing the character, capacity, and attainments of the child ; but experience shows that the items entered therein often need verification. The attendance of the teacher under whose instruction the child has been is therefore desirable, if not indispensable, to furnish explanations. The mother or father should also be present to give information as to habits and home-life, and particulars of family and personal history. The co-operation of doctor, teacher, and parent is indeed important to arrive at a satisfactory conclusion, and to secure data for the successful training of the mentally defective child.

The form of certificate prescribed presents some

difficulties. The examiner must satisfy himself, on the one hand, that the pupil is not *merely* dull and backward; on the other, that he is not so imbecile as to be incapable of receiving benefit from instruction in the special school, usually a *day*-school. There is no definite line of demarcation between imbecility and "feeble-mindedness"—*i.e.*, the degree of mental defectiveness with which the Act deals—consequently the diagnosis must be to a considerable extent a matter of personal opinion, and the standard adopted by different examiners will necessarily vary somewhat. The Royal Commission (following the lead of the Departmental Committee of 1897) have defined "feeble-minded" as "persons who may be capable of earning a living under favourable circumstances," though handicapped by congenital or early defect from competing on equal terms with their normal fellows; whilst they describe "imbeciles" as "incapable of earning their own living by reason of mental defect existing from birth or from an early age." The prospective capability of earning a living seems from their point of view the broad line of discrimination between the two classes, but the "favourable circumstances" form such an unknown quantity as considerably to diminish the value of the definition in relation to the rôle of the special school. It appears to us that practically the test as to the necessity of the child receiving special instruction is his capability of receiving benefit from it (though not from the ordinary school), and, we may add, not interfering with the benefit received by the other pupils. This latter consideration would exclude from mentally defective *day*-schools cases in which there exist physical infirmities of an objectionable character, such as faulty habits and prejudicial mani-

festations of ill-health which would interfere with the general comfort ; and the whole class of moral defectives who cannot be satisfactorily dealt with by the discipline of the special day-school, the latter being more appropriately placed in resident institutions, where they will be guarded, not only during the hours of instruction, but also when out of school. It should, indeed, always be borne in mind that day-classes in which the pupil will pass at most but one-fifth of his time, the other four-fifths being too often passed amidst unfavourable surroundings, cannot be expected to produce the same amount of benefit as a well-managed resident institution, though considerations of expediency and economy may preclude a more general resort to the latter, and there seem valid reasons why parents capable of judiciously managing their afflicted children should not be forced to send them from home. Special day-schools, however, must not be regarded as mere makeshifts for imbecile asylums, and while they remain a portion of the State educational machinery, it is not justifiable to use them merely for the day-custody of unimprovable defectives. In doubtful cases a period of probationary attendance may be allowed, but at each half-yearly inspection those proved incapable of benefiting by instruction should be carefully weeded out. Some caution is necessary also with regard to the admission of children whose irregular attendance or insufficient attention at the ordinary school is the result of lack of proper discipline rather than of mental incapacity. No doubt a type of child exists who could more appropriately be dealt with in an " intermediate " than in a " special " class, were the former in existence, and meanwhile it may occasionally be expedient to admit children suffering from

nervous debility or "nerve-storms," incapacitating them for the curriculum of the ordinary school, for a temporary course of the more individual and tactful instruction practicable in the smaller classes of the special school, the "mental defect" in such cases being regarded as of a temporary character.

Under Section 2 (Subsection 5) of the Act of 1899, the school authority has to make provision for the examination "from time to time" of children under special instruction to ascertain whether they have "attained such a physical and mental condition as to be fit to attend the ordinary classes of public elementary schools"; and as a parent may demand such re-examination every six months, the usual practice is for the medical officer to review the condition of the pupils at that interval. In this duty he is necessarily dependent to a considerable extent upon the teacher's report of progress, though it is advisable for him to satisfy himself by personal observation of the fitness or otherwise of each pupil for promotion. The medical examiner must bear in mind that in the event of a parent disputing the necessity of his child attending a special rather than an ordinary school, evidence will be required from him should the case come into court, and he must be prepared to justify on oath the course he has recommended from his personal knowledge of the case. Similarly, when application is made by a parent for the removal of his child from the special school previous to the statutory age of sixteen on the plea of his being fit for industrial employment, the duty will devolve on the medical officer of making a special report on the physical and mental condition of the case, which may have to be sustained before a magistrate. Appeals are also sometimes made to the Board of Education,

so that the medical examiner cannot be too precise in recording the facts on which he bases his opinion.

A note as to the appliances found serviceable in conducting examinations may not be out of place in concluding this chapter. A simple weighing apparatus and a standard for measuring height may be provided by the authority, and books, beads, colour-tests, etc., will be at hand ; but the medical examiner should take with him a measuring-tape, a stethoscope, a lens or ophthalmoscope, an ear-speculum and tuning-fork, and an easily cleansed tongue-depressor. In the London schools a bundle of gardeners' wooden labels are used for examination of throats, so that each child may have a fresh and uncontaminated one, and a " clicker " is used for testing hearing. The examiner will find it convenient to keep his own rough notes of cases for reference at home, in addition to the records at the school. Of course, a report on each examination is submitted to the school authority on forms provided for the purpose.

The same general principles apply to the examination of private patients needing special instruction. Though at present documentary evidence of fitness is not required in the same form as in cases receiving Government aid in their education, it must be remembered that the pronouncement that a " well-born " child is incapable of benefiting by ordinary school instruction is a matter of much moment to parents, who are, as a rule, very reluctant to recognise original mental defect in their offspring. Much tact is required in obtaining accurate particulars of family and personal history, even from persons otherwise veracious, and their opinions as to incidental accidents and illnesses being the effective causes of the mental condition have sometimes to be discounted.

All the incidents of the child's life—indeed, also of his prænatal existence—should be closely scrutinised, and their value as factors appraised; but it is wiser gently, though firmly, to insist on the congenital character of the defect, when there can be no doubt of it, rather than to raise false hopes of a possible cure of what is really an original and irremediable defect. At the same time, the possibility of a greater or less degree of amelioration by judicious training may be put forward as an encouragement for appropriate care and treatment, which, for the most part, is most effective away from home in an educational establishment organised for such cases, as prejudicial interaction of similar temperaments in parent and child is apt to militate against satisfactory treatment under the paternal (or maternal) roof.

CHAPTER VIII

THE TREATMENT OF MENTALLY DEFICIENT CHILDREN

(*a*) GENERAL. (*b*) MEDICAL. (*c*) SURGICAL.

THE treatment of mentally deficient children is essentially (to borrow a term from the French) *medico-pedagogic*. The physician, the teacher, and the nurse must all co-operate in the ameliorative process, and the judicious parent will best secure the interests of his afflicted child by placing him where the efforts of the three can be co-ordinated. As a matter of convenience, however, we shall consider in order, first the general treatment, including nursing and domestic management, and after that such treatment as belongs to the domain of medicine and surgery, reserving for a subsequent chapter matters educational.

Congenital defect in the young infant having been diagnosed, are there any means available for modifying its accompanying abnormalities? Much, indeed, may be done by a loving mother, who will be patient enough to persevere, in spite of apparently slight results, to promote sensorial development and co-ordinate movement, and, as months go on, to foster habits of cleanliness. The faculty of attention, too, may be cultivated, the child being coaxed to fix its gaze on one thing at a time. The aid of music is

serviceable in many cases, and even idiots will respond remarkably to congenial sounds, which they at length try to imitate, so that music is sometimes the stepping-stone to speech. Séguin well lays down the principles on which to proceed in the following paragraph :*

" As soon as any function is set down as deficient at its due time of development, the cause must be sought and combated ; if external, removed ; if seated in the nervous apparatus, counteracted by the earliest course of training and hygienic measures. The arm of the mother becomes a swing or a supporter ; her hand a monitor or a compressor ; her eye a stimulant or a director of the distracted look ; the cradle is converted into a class-room or gymnasium." It must, however, be remembered that the mother, if of neurotic temperament, is not the best person to conduct these infantile exercises. A judicious nurse, sympathetic, but not emotional, will have a better chance of success.

Amongst hygienic measures of the first importance is **proper feeding.** An emotional mother should not, as a rule, suckle her child. In her place a healthy, strong-minded, wet-nurse should be employed, or judicious artificial feeding should be used. The risk of scurvy-rickets from the exclusive use of preserved food (as demonstrated by Sir Thomas Barlow in his 1894 Bradshaw Lecture) must not be forgotten, and fresh milk in some form should come into the dietary. Frequently we find that infants who must be fed artificially do best with nothing else but fresh cow's milk, unsterilised, but diluted with a little water or barley-water. In the case of infants who give evidence of their mental weakness by inability to suck,

* *Idiocy*, p. 88. New York, 1866.

a spoon must be used, and great patience exercised. As the child gets older, well-boiled oatmeal porridge (*par excellence* the food for bone and brain building) should be given. Careful attention must be paid to the action of the bowels, which are apt to be sluggish, though sometimes there is a tendency to mucous flux. The **hygiene of the skin** is of importance, and frequent baths, with friction, are beneficial in promoting cutaneous exhalation, otherwise often offensive, and in aiding the sluggish circulation. **Muscular activity** should be encouraged, and the child frequently laid on the "kicking-rug," and encouraged by playful methods to exercise its limbs. Fresh air is absolutely essential, and we unhesitatingly recommend the modern vogue of keeping the baby out of doors for a considerable part of every day, asleep and awake, care, of course, being taken to see that he is properly protected from the weather, and kept warm by hot-water bottles, if necessary.

Cleanly habits must be promoted by every possible means. It is a mistake to condemn the deficient infant to perpetual swaddling-clothes. The aim should be to approximate as near as is practicable to the normal child, in costume as well as other matters. We have seen children of six swathed in napkins round their loins, reeking with offensive filth, to the great discomfort of all concerned, whereas methodical personal attention would have obviated the need of such expedients. Regularity in the relief of the bowels and the bladder should be early inculcated, and, of course, more frequent facilities are required than for ordinary children; but, except in the case of degraded idiots, there is every prospect of cleanliness being attained by patient perseverance. The practice of wetting the bed is a common one with weak-minded

people of all degrees, and sometimes there is a physical weakness of the urinary apparatus, which may be corrected by appropriate treatment. More frequently, however, these *lâches* are the result of inattention, and then moral methods, in the way of simple rewards and punishments, may advantageously be tried. One very simple remedy, partaking both of the physical and moral, is the restriction of the amount of fluid imbibed towards bed-time, and mentally feeble children are often " thirsty souls." Raising the foot of the bed, and ensuring that the child does not sleep on his back, are two other household remedies often efficacious. We do not approve of india-rubber urinals, and other mechanical arrangements, which only tend to perpetuate bad habits, any more than we do of the ingenious (?) method proposed by an Idiot Asylum Superintendent of keeping his beds clean by the nightly administration of enemata to all dirty patients !

If the child has a tendency to **dribble,** efforts must be made to strengthen the muscles of the lips. Such exercises as holding a pencil transversely between the lips for a given time, and blowing whistles and trumpets, may be useful for this purpose.

The **clothing** of mentally deficient children requires consideration. As with other children, it should be warm, yet light, and free from constricting bands. Woollen undergarments should be worn in all cases where this is practicable, but with wet cases there may be a difficulty as regards the nether garments, and where frequent washing is necessary, swansdown or some such material may be used. Jaeger's natural wool in winter, and cellular cloth (the so-called " *Aertex* ") in summer, form appropriate gradations as to warmth. With regard to the cut of clothes,

this should conform as nearly as may be to the ordinary fashion. It is wrong to accentuate personal peculiarities by peculiar clothing. There is no good reason why boys of eight or more should continue to be dressed like girls, when kilted costumes or sailor suits would be quite as convenient, and, moreover, promote a sense of self-respect. Weak-minded children are often not devoid of all pride of appearance, and this, judiciously cultivated, may be made a powerful lever in the upraising of good habits. We have known a case in which a tendency to destroy clothing has been overcome, not by attiring the child in sackcloth, but by providing for her a pretty costume.

Appropriate **exercise** occupies an important place in the management of the mentally deficient child. From the first, plenty of pure outdoor air is essential to the child whose brain activity is diminished by the imperfect aeration of its blood, and as time goes on, such muscular exercise as it is capable of should by every method be promoted. From a false sense of shame the deficient member of the family is too often carefully concealed from the public gaze, and when this entails, as we have known to occur, the segregation of the poor child to the limited area of its nursery, or at most to the seclusion of its "own back-yard," it is a question whether the Society for the Prevention of Cruelty to Children might not advantageously intervene! Teaching to walk will, of course, be a more tedious process than with ordinary children, but the faith which works by love will accomplish miracles, whereas neglect will too often entail permanent disability. Contractures of limbs, consequent on bad postures allowed to become permanent, are sometimes met with in the case of the mentally

Italy

PLATE XVI.

J. L. ("DIOGENES").

(R. A. A.)

To face page 135.

feeble; and we have a vivid recollection of a poor boy of twelve who, having spent his childhood, like a modern Diogenes,* in a tub (a sugar-hogshead), was brought to us with his legs so hopelessly deformed by his constrained posture that he was a complete cripple, though we afterwards succeeded in getting him to use a tricycle specially built for him.

But we must not linger on methods of exercise, which will be treated later; nor can we now enforce the importance of moral training from the earliest age in the formation of good habits, for this forms the subject of a future chapter. It must suffice to say that early home influences are specially potent for good or harm in the case of the mentally deficient child, and it behoves the parents of such to promptly obtain expert advice on the subject, as well as the aid of a well-qualified and intelligent nurse or nursery-governess.

The late J. Langdon-Down, in his Lettsomian Lectures† for 1887, laid stress on the prevalence of "morbid sexual erethism" in mentally deficient children of tender years, due oftentimes to the nefarious practices of an unworthy nurse. Whilst, happily, our own experience does not point to this condition as a frequent one, yet the contingency must be borne in mind, and proper measures of precaution taken.

The approach of puberty is of necessity an anxious epoch as regards domestic management, and too much care cannot be exercised by those in charge of "feeble-minded youths" (of both sexes) to guard against abuses of the animal instincts then awakened. Employment in the open air will at this period be of

* See Plate XVI.

† *Mental Affections in Childhood and Youth*, p. 47.

special value, and for obvious reasons sending to bed in the day-time as a punishment must not be thought of.

We now pass to methods in the treatment of the mentally deficient child, which we may more especially designate MEDICAL. It has been already stated that such children are, as a rule, physically as well as mentally deficient. At any rate, they are feeble in body as well as in mind; sometimes (as was said of one of our Kings) "not only weak in the head, but also weak in the *understandings*." The limbs, as well as the brain, are imperfectly developed, and, of course, nervous defects and disorders are frequently met with. There is in many cases, moreover, a tendency to malnutrition and a want of tone which renders its subjects specially liable to the inroads of infectious disease, and to parasitic skin affections.

We have already stated that a phthisical family history is extremely common with mentally deficient children. We shall not, therefore, be surprised to find in them a marked **predisposition to tubercular disease,** sometimes affecting the joints, more often the lungs, and occasionally—though perhaps less frequently than would be anticipated—the meninges of the brain. These causes account for from 50 to 75 per cent. of the mortality of institutions for imbeciles. Whether or not the conditions of institution life contribute to this excessive mortality might be fairly argued. In all cases, however, it behoves the medical attendant to watch for, and guard against, the incipient symptoms of tubercular disease, fortifying the constitution against it by hygienic surroundings, judicious feeding, including a sufficiency of carbonaceous elements, and the administration of cod-liver oil, malt extract, and Parrish's chemical

food. Children of the "Mongol" type are specially liable to break down from exposure, and in cold weather are apt to suffer not only from chills externally, but from internal congestions favourable to the development of tubercle bacilli. Tubercular affections of glands, eyelids, bones, and joints frequently occur, but of these the treatment will be considered under the head of *surgical*.

Mucous diarrhœa is an extremely common symptom, especially with "Mongols," and calls for care as regards feeding, and for suitable medication. We have found much benefit in these cases from the administration of a mucilaginous mixture of castor-oil, with the addition of minute doses of opium. Sometimes small and repeated doses of grey powder or calomel are of service. Astringents, pure and simple, given too early, are apt to add to the intestinal irritation.

Epilepsy has been stated to occur in at least 25 per cent. of all weak-minded children. Its dietetic and medical treatment is, consequently, of much importance in the amelioration of the mental affections of youth, which it sometimes causes, and always tends to aggravate. Our experience leads us to favour an exclusively milk diet in these cases, or, at any rate, a diet containing but little meat, and that well cooked and minced, so as to avoid the risk of peripheral irritation from large morsels being "bolted." At Lingfield Colony, where there are 126 children, and many good results have been obtained, the diet is chiefly vegetarian.

As regards drug treatment, while there is no question of the value of bromides in certain cases, there is considerable difference of opinion as to whether they should be adopted as a routine treatment for all

and sundry, and also as to the amount of the dose. Dr. McCallum,* the Medical Officer of the School for Epileptic Boys at Starnthwaite, in Westmorland, is an enthusiastic advocate of the routine administration of bromide, and often in large doses. He gives 20 grains night and morning, and increases by 10 grains per day as long as fits occur. If necessary, he administers 100 or even 300 grains daily, but 80 grains is the average. His experience is that boys take 80 or 100 grains quite well, but that with 150 grains or more equilibrium is interfered with, and the patient must be kept in bed. He has excellent results to show in support of his system. At Lingfield,† where most of the children are said to have more or less mental defect, bromide is given in selected cases, and pushed if necessary. The results in these cases are very good, and in almost every instance the child's work and mental capacity has improved. The statistics quoted by Dr. Aldren Turner in his book on epilepsy show that 50 per cent. of the cases treated with bromide derive benefit—facts which, as he points out, go to disprove Dr. Spratling's contention that, if recovery takes place under the use of the bromides, it is in spite of, and not on account of, the drug. In our opinion, the idiosyncrasies of each case must be studied, and while some are beneficially influenced by bromides, others will do best with borax or a mixture of the two. Dr. E. C. Séguin, of New York, advocated the addition of a small dose of chloral. It is well to remember the value sometimes of a combination of the bromides. Care, of course, must be taken that depressing effects are not produced. If acne occurs, the temporary administration of arsenic is

* *British Medical Journal*, March 14, 1908.
† *Ibid.*, June 1, 1907.

useful. Bromide rashes are, however, relatively uncommon in persons of cleanly habits, and Dr. McCallum, of Starnthwaite, says there need be no fear of a rash if the best English bromide is used. He says that the only treatment ever necessary, if it does occur, is a soothing ointment, and that the bromide can be continued. Strontium bromide has been recommended as preferable to the potassium salt, but Dr. Aldren Turner states that he has not found it more valuable than the other bromides. Among the new preparations of bromide, we have had favourable experience of *bromipin* (bromide and sesame oil). It is quite as efficacious as the ordinary bromides, and is now made in special tablets, which children take readily. It is also useful for excitable children. Bromipin can be given hypodermically in the *status epilepticus* without fear of abscess, and is not a gastro-intestinal irritant, the sesame oil with which it is made up being a simple emollient. The late Dr. Andriezen* spoke highly of a combination of antipyrin (5 grains) with ammonium bromide (15 grains) as "promoting a degree of mental brightness." In debilitated cases, the glycero-phosphates form a valuable combination with the bromides. If there be a syphilitic element in the causation of the epilepsy, bichloride of mercury, combined with bark, may be of benefit. As regards *organotherapy*, a system of treatment which at one time looked as if it might be useful, we need only say that further experience has not justified its promise. Thyroid extract, preparations of the thymus gland, and cerebrin have all been tried, with disappointing, and sometimes injurious, results. *Serotherapy*, or the treatment of epilepsy by injections of blood-serum from another

* *British Medical Journal*, September 16, 1899, p. 713.

epileptic, or by reinjection with the same epileptic, as introduced by Ceni, has also failed to establish itself as a treatment of value. The *auto-intoxication* theory of the origin of epileptic seizures has not been proved, but may hold good in a small minority of cases, and, at any rate, sometimes aggravates the condition, even when the real cause is to be sought elsewhere. Attention to the eliminating channels is, therefore, desirable. The periodical administration of calomel and other intestinal antiseptics is sometimes beneficial. It is to this view of the origin of epilepsy that the drugs *bromaline* (bromine and formaldehyde derivatives) and *bromocarpine* (bromine and pilocarpine) owe their introduction.

In *petit mal*, which is, perhaps, more often associated with mental enfeeblement than *grand mal*, and has a less hopeful prognosis, Séguin speaks well of "combining with a very moderate bromide course the free use of strychnine and atropine or belladonna."*

More important than drug treatment is what one may call the "**outdoor occupation cure.**" The experience of the Royal Albert Asylum, and more recently of the various epileptic colonies, is quite emphatic in this direction. Mere loafing in the open air is to very little purpose. The occupation is the predominant factor for good.

The most striking advance in the medical treatment of mental in conjunction with bodily defect is that of **sporadic cretinism.** Up to the year 1890, this was justly thought to be a hopeless form of idiocy; but the experimental researches of Victor Horsley and others encouraged the view that benefit might be derived from the implantation of the thyroid

* "Treatment and Management of Neuroses," *New York Medical Journal*, May, 1890, p. 31.

Non-Circulating

PLATE XVIII.

CASES SHOWN IN PLATE XVII. AFTER TEN YEARS' CONTINUED TREATMENT.

G. and D. B., aged 24 and 19 respectively; younger brother 9 inches taller than the elder.

Following Plate XVII.

gland of the sheep in such cases. Subsequently it was found that the injection of thyroid juice was of equal efficacy, and later that the ingestion by the mouth of the gland itself, or its preparations, was the best and most efficient mode of treatment. Thyroid grafting—a method of treatment which went out of vogue—has recently been suggested afresh by Sir Victor Horsley as the most desirable method, because it is permanent and avoids the continued administration of thyroid extract. His views on this subject will be found in the discussion on Dr. McGarrison's paper on " Endemic Cretinism in Chitral and Gilgit " (published in the *Proceedings of the Royal Society of Medicine*, vol. ii., No. 1, Medical Section, p. 1). When thyroid extract is administered, mental awakening proceeds *pari passu* with physical development in a manner almost startling. Those interested in the subject are referred to an article by Dr. Shuttleworth in Wright's *Medical Annual* for 1894, p. 324 *et seq.* The adjustment and regulation of the dose appropriate to each case, so as to avoid stomach irritation, excessive temperature, and undue emaciation, are the points calling for attention. So far as we can judge from present experience, this treatment (though in modified doses) must be permanent. Starting in children (according to age) with one or more 2½-grain tabloids daily, the dose may be cautiously increased up to six tabloids, and when improvement has been achieved one or two 5-grain tabloids daily will usually suffice to maintain it. The annexed Plate XVII., for which we are indebted to the courtesy of Drs. Railton and Telford-Smith, shows the condition before and after treatment of two brothers, one of whom was formerly under Dr. Shuttleworth's care at Lancaster, and Plate XVIII. their ultimate condition.

The majority of mentally deficient children being of feeble constitution, the prognosis of the **exanthemata**, and of acute disease generally occurring in such, must be guarded, and any depressing treatment is inadmissible. Cerebral complications are frequent, and convulsions not uncommon. Troublesome sequelæ affecting mucous membranes (in the eyelids and elsewhere) are apt to occur after measles, which, in our experience, is a disease almost as formidable as scarlatina with the imbecile class. The irritability of mucous membranes is at all times a source of trouble with mentally deficient children, and catarrhal discharges from the eyes, nose, and ears have to be treated with astringent lotions. **Spongy gums** are frequently found, especially when the hygiene of the mouth is not attended to, and chlorate of potash washes are useful in these cases. **Aphthous patches** and **parasitic diseases of the skin** must be treated by appropriate remedies. Curious **skin affections** of neurotic origin are sometimes met with in cases of mental feebleness, such as that described by Dr. Pringle and others under the name of "Adenoma sebaceum."* Phthiriasis is occasionally met with.

A few remarks as to SURGICAL treatment in relation to mentally-deficient children must close this chapter. The contractures of limbs may sometimes be remedied by tenotomy, but the deficiency of reparative power, and the difficulty found—at any rate, with lower-grade cases—in keeping appliances in position and free from filth, must be borne in mind before undertaking a surgical operation. We cannot, therefore, give mentally deficient children the full benefit of all modern surgery has achieved in

* *British Journal of Dermatology*, January, 1890.

the treatment of paralysis, especially as, to ensure success, the after-treatment must be prolonged. Indeed, Mr. Robert Jones,* of Liverpool, has placed many of these unfortunate children " in a group outside remedial art." For the relief of constitutional irritation, however, such as that caused by bone or joint disease in tubercular cases, operative interference is quite justifiable, and is generally successful. We have repeatedly seen considerable benefit to mental activity from the clearing away of post-nasal adenoid vegetations in feeble-minded children.

About 1890 the operation of **craniectomy**—*i.e.*, the cutting of strips of bone from the cranium—was recommended and practised in cases of microcephalus ; but " in a case of congenital microcephalus, when the small skull is simply moulded to the brain, which has been arrested in its development at a stage corresponding to that of the fifth month of intra-uterine life, it would seem futile to expect that cerebral development would be fostered by cutting chinks in the skull, which after a short period would be filled up by bony matter apt to encroach upon the cranial cavity. In the light of numerous autopsies described by Bourneville and others, the theory of premature synostosis, as a common cause of microcephalus, must be given up, and operations based on this theory abandoned."† Whenever signs of pressure present

* *On Certain Principles and Methods in the Surgical Treatment of the Paralysis of Children*, by Robert Jones, 1902.

† See article by Dr. Shuttleworth, *Medical Annual*, 1895, p. 327. Dr. Telford-Smith has described and illustrated in the American *Journal of Psycho-Asthenics* for June, 1897, the cases of two microcephalic boys whom he had the opportunity of closely observing during four years after craniectomy had been performed, his conclusion being that in the light of results the operation is unjustifiable.

themselves, however, as in oxycephaly, and in the rare cases in which there is a history of prematurely ossified fontanelles, operative interference might be justifiable, and nowadays the mortality of craniectomy is but small. There is no doubt that beneficial results have been frequently obtained by cranial operations in cases of mental deficiency associated with traumatism, epilepsy, and paralysis, and in such cases surgery should not be deferred until after the establishment of serious atrophic changes and degenerations.

CHAPTER IX

EDUCATIONAL TRAINING

WE now pass to the consideration of means which, as distinguished from general treatment, we may designate **Educational.** Under this term we include all those methodical and specific exercises, whether physical or mental, which naturally fall into the school routine, and need for their direction a skilled teacher, acting in concert with the physician. The kind and amount of educational exercise appropriate to a particular case of mental deficiency or feebleness should indeed be prescribed by the latter, and consequently a cursory sketch of the teaching *technique* adapted to characteristic varieties may not be out of place in what aspires to be essentially a medical work. As a matter of convenience, industrial and moral training, though forming integral portions of the educational system, will be considered in subsequent chapters.

In dividing educational means into (*a*) **physical** (those more particularly addressed to the body), and (*b*) **mental** (those more particularly addressed to the intelligence), we must bear in mind that the two are not independent of each other, and that with regard to mentally deficient children especially, " the physiological education of the senses must precede the psychical education of the mind."* We may add

* Séguin, *New Facts*, etc., p. 41. New York, 1870.

that the training of the muscular system to ready and regulated response is merely an extension of sensorial training; and both these processes naturally precede, and prepare the way for, more purely intellectual training. It has been well remarked by Froebel that, "in primary education, the Doing, the Thing Done, the Teaching and the Learning must, in every case, rest on actual fact and on real existence, so that the mental intelligence, incessantly striving upwards in single things, as in its general career, may thereby expand and develop the life-giving creative powers of the pupils, according to the measure of their strength and ability, their talents and desires."* The mentally feeble child is specially incapable of comprehending abstractions: all instruction, therefore, must be presented to it in a concrete form, which it can not only see, but, when possible, grasp in the hand as well as in the mind. Many of the "games" and "occupations" of the kindergarten are consequently of service, but whereas the normal child exercises its own spontaneous activity through these occupations, those who are mentally deficient, especially those of the apathetic type, have to be stimulated to action by the force of imitation. Our system of education, then, starts on physiological lines, first addressing itself to the **culture of the external senses,** then to the **co-ordination of muscular movement,** and finally to the promotion, by imitative and other exercises, both of the **manual and mental activities.**

In thus laying down these general principles of procedure, it must not be imagined that all cases can be treated in the same way. On the contrary, it is essential to success that the teacher should study the

* Froebel's *Letters on the Kindergarten.* Swan Sonnenschein and Co., 1891.

individual peculiarities of each case, and adapt the educational methods employed to those peculiarities. Mentally abnormal children may be broadly divided into two main groups: (1) those who are **dull and apathetic**; (2) those whose **nervous and mental action is irregular.** It is obvious that the rousing, stimulating *régime* suitable for the former is not that most appropriate to the latter, in whom the inhibitory and co-ordinating functions require to be strengthened by exercise.

As extreme examples of the first group we may instance the "impassive, low-grade idiot, whose education begins with a bombardment of bean-bags. Such a child is so inert as not at first to put up its hands to protect its face from the bean-bag thrown at it by the teacher; gradually, however, the instinct of self-preservation asserts itself so far as to ward off the missile. The second step, to catch the bag, and the third, to throw it back to the teacher, mark successive steps of improving mental activity; and from these progress is made in the direction of simple drill, aided by music."* The bean-bags referred to are about 5 inches square, made of bright-coloured flannel, and loosely filled with beans or maize, so that their impact is not hurtful. The same sort of exercise, varied by aiming the bags so as to pass through round or square holes in a board, or into the mouth of a grotesque figure, is excellent for promoting alertness of the eye and hand, as well as concentrating attention, in higher grade children.

Amongst children of the second group we include those with evidences of an over-mobile nervous

* See paper by Shuttleworth, "On Points Connected with the Education of Feeble-minded Children," *British Medical Journal*, September 8, 1894.

system, or with uniform repetitive movements, such as those designated *athetosis*. The golden rule in these cases is—try to substitute in place of purposeless, irregular movements, motor exercises with a definite purpose, and calling for will-power. In this way inability to fix the attention (*aprosexia*, as it has been called) is gradually overcome, and the moral satisfaction resulting from "something attempted, something done," encourages to fresh efforts. In cases where nervous irritability is so great as to give

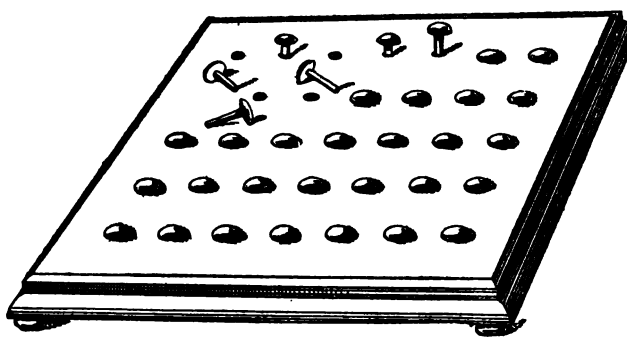


FIG. 4.—PEG-BOARD.

rise to destructive tendencies, the irregular energy should be turned into constructive channels; thus a child of this temperament may be coaxed to build up wooden bricks into some definite form for the pleasure of knocking them down with a crash! Gradually he may be led on to practise building for its own sake. The child with incessant movements of his fingers (*athetosis*) is usually not greatly wanting in will-power, and it is marvellous how much may be achieved by appropriate finger exercises (such as those of the **peg-board,** see Fig. 4), or the more interesting kinder-

garten occupation of "picture perforating." The intelligent teacher will know how to adopt, and adapt to the use of the deficient child, the various educational means now in vogue in our infant schools. It must, however, be borne in mind that much that the normal child learns intuitively needs to be taught specifically to the abnormal. The external senses are often functionally inactive, if not structurally defective, and it will be necessary to open up, by a series of sensorial exercises, these obstructed avenues of approach to the central intelligence. Then the due co-ordination of muscular movement must be strengthened and regulated by judicious drill. Finally, the general intelligence must be cultivated by interesting the child in its surroundings, and breaking down the isolation in which the solitary idiot, and to a less extent the mentally feeble child, carry on their existence. All this preliminary work of necessity precedes instruction in the three "R's" and what we are accustomed to regard as ordinary schoolwork. We rejoice, however, to find that the physiological sequence we have indicated, and which was laid down by Séguin seventy years ago as *the* educational mode for defective children (as well as for others), is gradually being recognised in the curriculum of elementary schools. We do not venture to trespass upon the domain of pedagogy farther than to point out the special methods of instruction indicated to meet the special requirements of pupils who, by reason of mental defect (often associated with physical), cannot "properly be taught in the ordinary standards or by ordinary methods."

And first with regard to **sensorial training,** it will be convenient to consider separately the several

senses, though in practice the training will be of a combined character.

The **tactile function** is not only the most general, but in some respects the most important of our senses, and in the normal baby its evolution takes precedence of the rest. Impressions through the eye and ear are criticised through the sense of touch, and this natural development, so serviceable in the spontaneous education of all healthy young animals, must be imitated in our endeavours to bring up towards the normal standard the sensorial training of imperfect children. In some cases we shall find coarse, insensitive hands which must be drilled into sensibility by grasping hard and soft objects, and discriminating the resistance and surface impressions of such varying substances as polished marble, sand-paper, velvet, silk, etc. Sensibility to heat and cold may be gauged and cultivated by the handling of bottles filled with water of varying degrees of temperature. Such lessons will, of course, form incidents of the object-lessons which play so important a part in early education. In some exceptional cases there is a morbid sensibility (*hyperæsthesia*), which is best counteracted by friction against hard substances, and the employment of the fingers in coarse work.

The use of the **peg-board** (Fig. 4) has already been mentioned as serviceable in cases of *athetosis* (spasmodic finger movements) : it is also valuable in cultivating the tactile sense. Similarly **size and form boards** (Figs. 5 and 6) promote accuracy of grasping movements, and a pin-cushion covered with spotted material, into the spots of which the child sticks pins, is useful in exercising minute sensation, as well as fine adjustment of the muscles. Threading coloured beads and buttons serves not only as an exercise of

the tactile sense, but, as will afterwards be pointed out, of the arithmetical faculty.

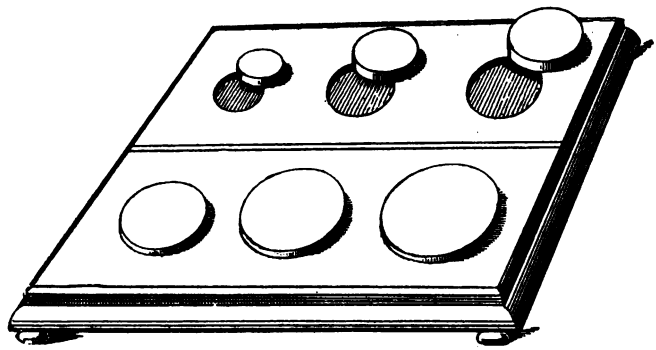


FIG. 5.—SIZE-BOARD.

The sense of **sight** comes next in importance to that of touch, as regards training. Ocular defects

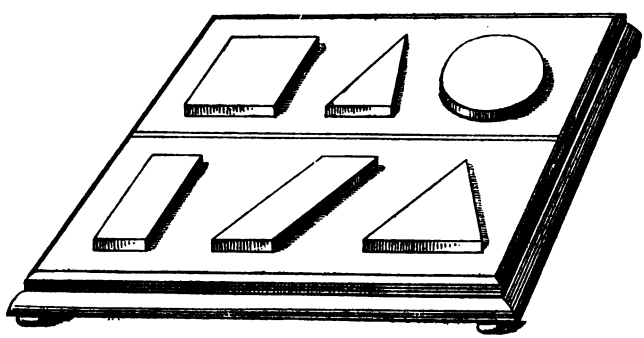


FIG. 6.—FORM-BOARD.

must, of course, be treated by the surgeon, and in errors of refraction correcting glasses supplied; the

teacher's function is to concentrate the wandering gaze, to specialise the vacant stare of the defective pupil. To quote a quaint Gallicism of Séguin's, " the main instrument in fixing the regard is the regard "; that is to say, the vagrant eye of the pupil may be brought to attention by the fixed gaze of the instructor. Glittering objects, such as the silvered globes used for Christmas-trees, are serviceable also for this purpose, especially with very young children, and the kaleidoscope is an attractive toy of distinct educational value for older ones. The independent movements of the eyeball, apart from those of the head, should be made a point of ; the training of the ocular muscles is too often neglected, with the result that the child's lateral range of vision is unduly restricted. Discrimination of colour is a later exercise of the visual organ ; and for this purpose discs of various colours for the child to match, cubes, the sides of which are vari-coloured and are successively turned uppermost, following the lead of the teacher, and a series of cups and balls, to be fitted together in corresponding colours, are useful aids. But perhaps more interesting to the juvenile mind is the matching of coloured ribbons and articles of clothing, or pointing out corresponding hues in coloured pictures. Exercises in colour perception naturally lead to the distinguishing of colours by name, but the former take precedence in sensorial training. The teacher or nurse should not therefore commence by asking the child *which* is red, blue, etc., but the colour sense should be exercised by getting the child to sort into separate heaps the several discs or pieces of coloured cardboard. Matching coloured wools, and finding cards corresponding in colour to the squares on the colour chart, are other useful exercises. Forming

pictures from picture cubes is a more advanced form of eye training, and the use of **size and form**

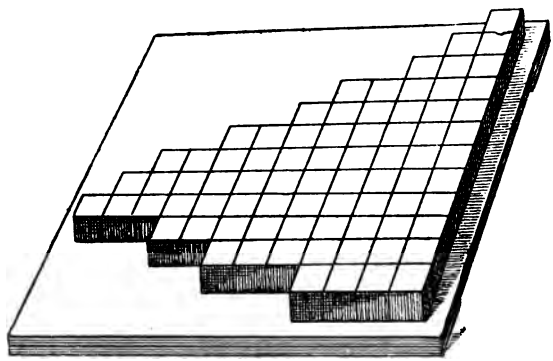


FIG. 7.—GRADUATED WOODEN RODS.

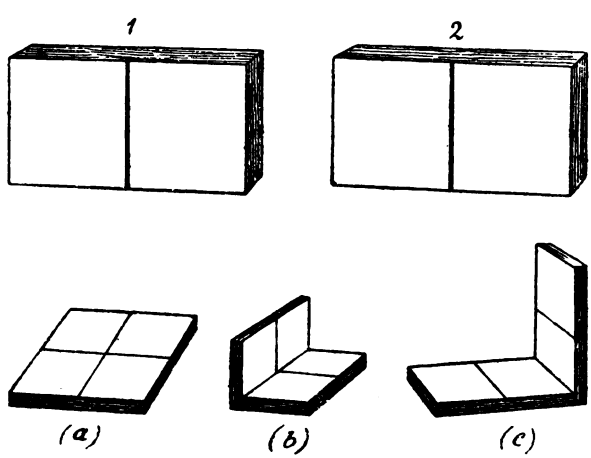


FIG. 8.—DOMINO-BOARDS.

boards (Figs. 5 and 6), and of the **graduated wooden rods**, to be arranged in step-like series (Fig. 7), exer-

cises both hand and eye, and imparts ideas of form and dimension. Ideas of relation are similarly imparted by exercises with **domino-boards** (Fig. 8), two of which are placed (*a*) flat, side by side ; (*b*) at right angles laterally ; and (*c*) at right angles end to end, following the lead of the teacher.

Taste and smell, being essentially animal rather than intellectual senses, do not, as a rule, require much stimulation in the mentally deficient class.* But discrimination must be exercised by offering to the pupil substances of similar appearance, such as salt and white sugar, to be distinguished by taste ; ground coffee and snuff, to be distinguished by smell.

Hearing is sometimes apparently deficient when the real deficiency is that of attention. Mentally feeble children often hear perfectly well, but do not take the trouble to listen ; they may, however, be coaxed to do so by presenting to them agreeable sounds. Fortunately, music has for this class special charms, and a simple song will often enlist attention when mere speech is disregarded. Nursery ditties are consequently not without educational value, and, as we shall see later, often form stepping-stones to speech. Tone-deafness is sometimes met with, and if low-pitched sounds are not apprehended, those that are more shrill (such as those produced by the whistle) should be tried. At a later stage the discrimination by pupils of the different quality of sounds produced by different instruments is a good exercise.

* Perverted and abnormal states of these senses are occasionally met with in idiots ; we have known one whose peculiar " taste for literature " was manifested by his " devouring his book," cover and all ; and another who distinguished his own and his comrades' clothes solely by the sense of smell !

Speech is a complex function, having important relations to auditory perceptions on the one side, and on the other being dependent upon the integrity of nerve centres and tracts, and the due co-ordination of the muscular apparatus concerned in vocalisation and articulation. More or less imperfection of speech is extremely common with mentally deficient children, and when not the result of want of development or lesion of the cerebral speech-centres, much may be done in the way of amelioration by appropriate training. Excluding cases dependent on deafness—in which lip-imitation methods are of much value, and the " oral method " has a literature of its own—we may say that, as a rule, such children require to be taught to speak much as a baby learns to speak. In some cases, however, a course of lip and tongue gymnastics is an essential preliminary. The pupil may be unable to bring the lips together, to bring the teeth together, or to direct the tongue as required for the formation of a sound. In such cases special exercises adapted to the particular infirmity are requisite. To improve the power of closing the lips, a flat piece of boxwood, an ordinary penholder-stick, or a bone ring may be held by the child between his lips for a few minutes at a time ; and this is an exercise useful in repressing slavering. Blowing a whistle is also of service, and puffing into motion a pellet of paper or a flake of cotton-wool helps in the power of pursing up the lips necessary for labial sounds. Opening and closing the mouth, so as to bring the teeth together ; putting out the tongue, deviating it to the right and to the left, and touching with it the teeth of the upper and the lower jaw respectively, also the roof of the mouth, are other forms of oral exercises serviceable in overcoming defects of co-

ordination interfering with clear articulation. Exercises in deep breathing are also important.*

In most cases, though not in all, consonant sounds are more readily acquired than vowel sounds. The normal infant starts its attempt at speech by repeating the simplest *labials* or *linguals*: "bab-ba," "mamma," and later "dad-da," are among its earliest efforts. Following these lines, the child deficient in speech should be exercised in simple reduplicated consonant sounds, followed by the open vowel *a* (*ah*). A schedule of speaking exercises based on these principles was published by the author in an article on the "Educational, etc., Training of Idiots and Imbeciles," in Hack Tuke's "Dictionary of Psychological Medicine."† In this the repetitive phonetic (*e.g.*, "*mam-ma*") is coupled with the name of a common object ("*mat*," "*man*"), of a part of the body ("*mouth*"), and of part of dress ("*muff*," "*mitten*"), beginning with the consonant sound (*m*); and so on through the series of labials, linguals, labio-dentals, gutturals, and nasals. There is also a table of vowel sounds and examples. But for the present work it must suffice to say that for mentally deficient children half the battle is to sustain their interest, and mechanical exercises in speaking, however well devised, must be brightened up by illustration. The naming of objects in well-chosen pictures,‡ and of the child's own surroundings, and the imitation of the characteristic cries of animals, are some of the best means of making a start with speech. A child will demur to repeat sounds read by a teacher from a

* *Breathing Exercises*, by Duncan Matheson Mackay, M.D. (London: J. Bale, Sons and Danielsson), price 1d.

† Churchill, 1892, vol. ii., p. 673 (see Appendix C).

‡ Dean's *Book of Objects* is recommended.

table, though he will cheerfully respond to the questions, "What does the cow say?" ("*Moo*"), or, "What does pussy say?" ("*Mew*"). Similarly he will imitate the "*Ba-ba*" of the sheep, or the "*Bow-wow*" of the dog, and thus learn both consonant and vowel sounds without conscious effort. Slovenly pronunciation, with slurring of final consonants, especially if doubled, is a frequent failing with the child of inert temperament, and needs to be dealt with by vigilance in reading and recitation exercises. Stammering, and especially stuttering, is common with those of neurotic type, and slow and deliberate utterance should be encouraged in such, exercises in deep and diaphragmatic breathing being an essential preliminary, with practice in controlling the exit of the breath. Intonation of vowels, and the gradual introduction of preceding consonants, special attention being given to those over which there is tendency to stumble, are amongst the expedients found serviceable, but these methods are best applied by skilled teachers capable of appreciating the physiological disabilities of the pupil. For those following up the subject valuable hints will be found in such treatises as Dr. Wyllie's on "The Disorders of Speech," Dr. W. S. Colman's article on "Impediments of Speech," in Allbutt's "System of Medicine," vol. viii., and Dr. Leonard Guthrie's "Functional Nervous Disorders in Childhood."

There are two peculiar modes of speech, occurring, indeed, at a certain stage of development in normal children, but apt to persist in what Dr. Guthrie well designates the "crystallised infancy" of imbeciles, which call for special notice here—**Echolalia** and **Idioglossia.** By **Echolalia** we mean the parrot-like imitation of heard sounds and words without any

definite connotation of their meaning in the mind of the imitator. All children begin to talk in this way, but the bright child soon associates the sound "*Mamma*" with his mother, "*Nan-na*" with his nurse, and so on. In due time he attains a rational vocabulary, which he is able to apply in naming familiar objects, and subsequently in replying to questions. But with some low-grade imbeciles this stage is never attained. Hearing being, however, good, and the commissural connections between the auditory centres and the organs of speech being fairly developed, a kind of reflex action is set up without the intervention of thought, and what is merely the echo of spoken words is the result. In some cases only the last words of a phrase are repeated, in others the whole phrase. Thus an imbecile, when asked "What is your name?" may reply simply, "*Name*"; or another may vacantly repeat the whole question without giving an answer. Yet the fond parent will stoutly maintain his child can "speak," and will be much discouraged, if not indignant, when told that such speech is nothing worth, and, if persistent at an age beyond infancy, denotes a low grade of mental defect. Of course, with a quite young child the prognosis is more hopeful, as there is a chance, under persevering training of the powers of observation, of his attaining the indispensable association between the name and the thing.

Idioglossia (derived from the Greek word ἰδιό-γλωσσος = *of peculiar tongue*) is a term applied to a species of "baby language" persistent beyond the period of babyhood. Up to three or four years of age the normal child is apt to substitute sounds easy of articulation for more difficult ones: thus, "muvver" is substituted for "mother"; "fahēē" for "father";

and so on. Further, when phrases are formed, the pronunciation of the words may be grotesquely varied, as in such a sentence as " Ditty is dood 'ickle boy "—*Dicky is good little boy*. Fond and foolish parents and nurses sometimes allow themselves to fall into similar modes of language in conversing with their children, and so correct pronunciation is delayed. A child, indeed, sometimes builds up a fancy language of his own, unintelligible to any but his intimates, which may, in fact, seriously handicap him in the early years of education. In some of these cases there seems to be partial auditory or visual defect: in others, however, there may be some degree of mental defect, and imbeciles are occasionally met with who have constructed a sort of language of their own, requiring a glossary for its comprehension. Such a girl of ten, formerly under Dr. Shuttleworth's care, habitually called him "*Fish*," because her family medical attendant had been a Dr. Fisher; his wife she designated "*Fish-mamma*," and his daughter "*Fish-dolly*"! An old man putting glass into the greenhouse was promptly christened by her "*Pa-putty*"! In this case the "idioglossia" seems to have had a philological basis. Interesting as these deviations from normal speech may be, they are not, however, to be encouraged; and in the case of imbecile children especially, every effort should be used to promote correct pronunciation. Training in speech is, indeed, a valuable means of fixing the attention and cultivating muscular co-ordination, and in these respects, as well as for its specific effect, may be regarded as a valuable adjuvant to other educational measures.

It has already been remarked that with the feeble-minded, music is often a stepping-stone to speech.

Such children will frequently hum tunes that take their fancy before they are able to articulate words; but if attractive tunes set to words containing repetitions of simple sounds (such as the "Ba-ba black sheep" of our old Nursery Rhymes*) are constantly repeated to them, the probability is that, after a time, first one word and then another will be taken up by the pupil, till the rhyme as well as the tune is known.

We pass from the cultivation of speech, which occupies an intermediate place between sensorial training and the co-ordination of muscular movement, to a consideration of the exercises more especially addressed to the latter, which we include under the comprehensive designation of drill. With children of deficient bodily as well as mental development, physical training is serviceable not only for muscular growth and co-ordination, but, inasmuch as it demands prompt obedience, for strengthening the faculty of attention. The movements must be gentle and adapted to individual capacities, and even *incapacities*; mere "tours de force" are inadmissible. Musical drill is to be preferred—at any rate, in the first instance—whenever practicable, and there are now many excellent manuals on this subject, such as Gill's "Physical Exercises," Alexander's "Musical Drill for Infants," etc.,† which may be advantageously used for exceptional as well as ordinary children. Light wooden dumb-bells, wands and rings, are the simple apparatus required. The Syllabus of Physical Exercises issued by the Inter-Departmental Com-

* Elliott's *National Nursery Rhymes* is recommended for this purpose.

† See also *Physical Education*, by Lennox and Sturrock (Blackwood).

mittee for use in Public Elementary Schools, contains many that are also appropriate for special schools, including some for deep breathing. For special infirmities, however, such as we frequently meet with in the mentally feeble, special exercises have to be devised for particular cases; and the want of balancing power many show is overcome by "toeing the line," by walking the plank, by stepping first between the broad bars of a ladder laid horizontally on the ground, and then from bar to bar. Deficient grasping power is strengthened first by the bean-bag exercises previously referred to, then by bar-bells, and finally by supporting the weight of the body on parallel bars or from the bridge-ladder.

Though scarcely gymnastic, **dressing lessons** may be given with advantage as class exercises to children inexpert in putting on their clothes. Buttoning, lacing, and tying bows and knots bring into play fine adjustments of the fingers frequently deficient in the mentally feeble.

With regard to the more *ordinary school exercises*, we can only indicate a few points in which special stress should be laid in the case of mentally feeble children. "*Facta non verba*" should be the guiding principle; things done will make much more impression than things merely said; and whenever practicable, lessons should be illustrated by objects, for, as was remarked by Horace:

> "Segnius irritant animos demissa per aurem
> Quam quæ sunt oculis subjecta fidelibus."

Mere parrot-like repetitions of matters committed to memory should be discouraged; nothing should be learned by rote which is not understood, otherwise

much labour may be lost, and at length we may find (with Longfellow) that

> "In an idiot's brain remembered words
> Hang empty mid the cobwebs of his dreams."

In this connection we may lay stress on the importance of simple conversational examination, in which the pupil is encouraged to take a full part, the teacher thus ascertaining how much the child has understood of a lesson, and encouraging the latter to add to his vocabulary and powers of language.

Object-lessons must start from the simplest facts within the child's observation. The names and uses of the sense-organs, of the limbs, of articles of clothing, of the furniture of the room, are some of the subjects upon which the child's intelligence should be exercised.

Nature study is attractive to many, and is most useful in educing and cultivating powers of observation.

Drawing and writing are best taught in the elementary stage by free-arm and large scale exercises on the blackboard chequer. Drawing lines vertically, horizontally, and obliquely, between points marked by the teacher, and afterwards delineating common objects under which the names may, with help, be printed and written,* pleasantly lead the children on both to **writing and reading,** and with regard to the latter it may be remarked that the "*word-method*" is to be preferred to the old-fashioned plan of beginning with the drudgery of the alphabet.† Of course, the sounds and names of letters are learned

* See *Reading Made Easy,* Anna Snell. Philip and Son, London.

† Gill's "Regina Reading Sheets" are useful.

at a later stage, words being dissected for this purpose with the aid of the letter-box.

Calculation is the *crux* in educating the mentally deficient.* Counting (so-called) may be glibly done without any apprehension of the meaning of figures; consequently the concrete must always elucidate the abstract. Many excellent aids are published for this purpose, pictorial and otherwise; but the ingenious teacher will not be dependent on these, as the child's own fingers, the pupils in class, etc., are always available for demonstration. Shells, beads, and the abacus are also convenient objects for counting. To elucidate the value of weights, money, and to teach simple calculation, there is nothing better than the "shop lesson," an elaboration of the nursery game of shop, in which common groceries are weighed out and paid for by the pupils, problems in change being tackled practically.

Industrial training is intimately interwoven with educational processes, but will be specially treated in the next chapter.

* It is remarkable that in the case of candidates for admission to the London Special Classes there is often a certain ability to make small calculations as to pennyworths, such as they have been accustomed to in errands for their parents. With them reading seems to be the *crux*.

CHAPTER X

INDUSTRIAL TRAINING AND RECREATION

To complete the educational fabric appropriate to mentally deficient children, the woof of **industrial training** must be closely interwoven with the warp of scholastic exercises, and a wholesome moral influence must be the pattern pervading the whole. In the present chapter we offer some hints as to special modes of industrial training found useful.

The " occupations " of the Kindergarten (selected so as to avoid too minute work) form attractive and serviceable preliminaries to handicraft. " Paper-weaving," for instance, is an excellent preparation for the more prosaic industry of stocking darning, and the " pricker " used for perforated pictures will serve as an introduction to the cobbler's awl. Useful as are Kindergarten occupations for training the fingers, and, through them, the intelligence, the actual products of child-labour in the way of bead necklaces, variegated paper mats, clay and cardboard models, etc., have a distinct value in developing continuity of attention and stimulating further effort, as the principle of achieving a tangible result is specially satisfactory to the mentally feeble child. In this respect, industrial training has an advantage over mere book-learning, and it has been well remarked that feeble-minded children learn more with their hands than with their head. A judicious industrial

trainer, in fact, develops the child's intelligence *pari passu* with the use of his fingers.

The kind of employment most suitable differs with the particular characteristics of each case. With the majority, outdoor work is the best whenever practicable, and we have repeatedly seen both physical and mental development set going by such healthy occupation, when indoor teaching and employment had proved unavailing. Careful supervision is, of course, needed; otherwise, if put to weed a garden the child may ruthlessly root up plants as well. The love of seeing things grow, however, should be fostered, and the child will soon watch with interest how the seedling gradually becomes the plant. To every special school a children's garden should, if practicable, be attached. The care of plants in pots, the growing of bulbs and germination of acorns and chestnuts in glasses, and even growing mustard and cress on moistened flannel, are simple forms of Nature study which delight the pupils of the London special classes. Kindness to animals should be inculcated; and, when this exists, occupation at a farm is often beneficial, much interest being taken in the stock.

For town-bred children, unfortunately, outdoor occupations are not, as a rule, available. There are, however, many varieties of manual training now commonly practised in connection with our public elementary schools and in technical classes in which the mentally feeble may participate. Cloth and cane weaving, simple hand-basket making, rococo-work, sash-line plaiting, are some of the arts easily acquired, which furnish a very pleasing result; and the same may be said of macramé work, which in our experience is an excellent exercise for those subject to finger twitches. We have elsewhere remarked

that these athetotic patients frequently possess graphic and artistic ability; and for such, wood-work and even wood-carving form congenial employments. It is marvellous how by persevering exercise of will-power, such pupils gradually overcome their spasmodic movements, and are at length able to execute quite fine work with the chisel and graving tool. Girls with athetoid affections often become, under training, good needlewomen, putting in their stitches with great regularity. The mysteries of knitting, crochet, and other fancy work are also mastered by them; and we have seen a mentally feeble girl, crippled as to her right hand by spastic contractures, do fine-art needlework with her left.

The practical needs of after-life must, of course, be borne in mind in selecting a particular employment. The gentleman's son, though comfortably provided for, will be all the happier for having an occupation to turn to; and for such, carpentry, wood-carving, and even turning, are good indoor pursuits, whilst gardening and farming are specially appropriate. Young ladies who by reason of their feeble-mindedness will be to some extent debarred from the ordinary pursuits of society should be encouraged to take an interest in domestic matters, and to assist in the still-room. They may also employ themselves in a variety of fancy work; and if they possess any artistic or musical tastes these should be cultivated.

For children of the working class some occupation which they can carry on under the eye of their parents is desirable. If they live in the country, they should be trained for agricultural labour, or to assist in garden work. If in town, some work which they can practise at home, or in *small* establishments, such as cobblering or tailoring, basket or door-mat making,

should be taught them; for obvious reasons they are unfit for factory work. Girls should be trained to work in the house and the laundry, to cook, and to make garments. Many imbeciles who have been brought up in Institutions are quite capable of earning their living under favourable circumstances, but the "*res angusta domi*," and (too frequently also) parental incapacity, are *not* favourable circumstances, and consequently, if discharged to their own homes, there is much risk of training being thrown away. This is one of the arguments in favour of permanent custodial working-homes and colonies being instituted by private benevolence and the public authorities for mentally deficient children capable of useful industry.

Recreation.—For mentally feeble, as well as other children, the maxim "*ne quid nimis*" is especially appropriate. Study and occupation must be varied; signs of fatigue watched for and guarded against; and relaxation is essential. But care must be taken that relaxation does not degenerate into loafing; suitable active recreation must be supplied. Mentally deficient children, particularly those of low grade, are apt to be of solitary habit; they have no idea of combination, even for games. Games of ball may, indeed, be practised alone, but they are much more useful when played with others in the form of rounders, cricket, hockey, or tennis. Football can only be played under special conditions—neither Rugby nor Association Rules; it forms a valuable exercise for the lower limbs. Even golf may be played by feeble-minded people. Games at marbles are good for finger training. Trundling hoops, playing horses, etc., should also be encouraged. Skipping is an excellent exercise for boys as well as girls, so long as the heart is all right. The game of battledore and shuttlecock

is good training both for hand and eye. Of indoor recreations, dancing is to be specially commended as tending to improve carriage and diminish the tricks of gait which often mark the mentally deficient. "Musical Chairs," "Post," and similar games, promote both activity and intelligence. Bagatelle is a good indoor diversion, the scoring being of educational value; and the game of dominoes helps in ideas of number. Even card games may be played by the more intelligent, and whist is an excellent exercise of memory. The "children's hour," so valuable an institution in normal nurseries, is specially useful with the mentally feeble, who often require to be *taught* to play, and sleep better for the romp before retiring.

The love for music which is common with the mentally feeble suggests attendance at concerts and at musical services as appropriate modes of enjoyment. With some a considerable sense of humour exists, and theatrical performances, especially when abounding in comic situations, are much appreciated. It is of importance that entertainments at which mentally deficient children are present should be of a refined character. Coarse buffoonery and scenes of violence—provocative to some weak minds of imitation—should be carefully avoided. Even our old institution of "Punch and Judy" is not altogether unexceptionable for a feeble-minded audience!

N.B.—Specimens of time-tables in use in special schools will be found in Chapter XII., pp. 200-203*; also lists of authorised "Forms of Manual Instruction," pp.* 197-198.

CHAPTER XI

MORAL TRAINING

If good **moral training** be a prime essential in every system of education, it is specially so in the case of mentally deficient children. Not that the mentally feeble child is by nature morally worse than the ordinary child, but his weakness makes him more readily "suggestible," so that an evil example—not to say precept—may in his case be specially injurious. It is a curious and lamentable fact that when the inhibitive nerve power is weakened, either from disease or from original defect, the lower nature is apt to assert itself, both in deed and word; and it is sometimes a matter of surprise how mentally feeble persons, notwithstanding good surroundings, give vent to the most evil language, profane or obscene Even the hasty word, carelessly uttered, may be taken up by the weak-minded child, and reproduced on some inconvenient occasion. Great care, therefore, should be taken by all in charge of such cases to be choice in their language, as well as correct in their conduct; for imitation is characteristic of the class. On the other hand, a good moral influence is insensibly exercised by those who are judicious, and the choice of a teacher or attendant is a matter of supreme importance, moral as well as mental qualifications calling for consideration.

As regards **moral discipline,** coaxing, not coercion,

must be the guiding principle. With the mentally deficient especially, "force is no remedy"; the "cowed" child will be a cowardly child, with no pluck or spirit to advance itself. As Roger Ascham remarks with regard to the ordinary pupil, he must in no wise be "beaten into the hatred of learning"; and not only in the scholastic, but in the general management of the mentally deficient child, love must be the all-pervading principle. At the same time judicious firmness must be exercised; and consistency in word and deed, combined with tact, are essential to moral influence. The mentally feeble, like the ordinary child, soon finds out to whom he must render prompt obedience. It is specially true of him that he cannot "serve two masters," and attempts at dual control are apt to result in failure. This should be borne in mind in making arrangements with a governess, whose influence should not be impaired by unnecessary parental interference.

A system of rewards and punishments, modified, of course, to meet individual peculiarities, is efficacious with this class as with others. Mentally deficient children are frequently eager to obtain the commendation of their superiors, and sometimes withholding commendation will make sufficient impression; at other times words of reproof are necessary. Corporal punishment is rarely beneficial; yet there are cases where pain wantonly inflicted on others is appropriately visited by pain inflicted on the offender. Sometimes an appeal to the mind is best made through the stomach: thus the cutting off of some favourite article of food (*e.g.*, pudding or sugar) from the day's dietary will mark disapproval better than any other mode.

The deprivation of some looked-for pleasure, such as attending an entertainment or going to church, will be efficacious in many cases; with younger children the temporary forfeiture of some favourite toy is all that is necessary. Older cases occasionally (perhaps exceptionally) develop a keen interest in the value of money, and such are best touched by an abatement of their allowance, or the enforcement of a fine.

With the growth of intelligence it must be pointed out that harm, followed by punishment, inevitably results from evil doing, and that

> "Though the mills of God grind slowly, yet they grind exceeding small;
> Though with patience He stands waiting, with exactness grinds He all."

The weak-minded person is not to be encouraged in the notion—but too easily taken up with dangerous consequences—that, because he is not quite like other men, he is less responsible for his actions. From foibles he should, of course, be guarded; and he should learn to respect his neighbour, and act on the legal maxim, "Sic utere tuo, ut alienum non lædas." It would be out of place here to discuss the question of the legal responsibility of the mentally deficient; both of us have elsewhere argued that moral responsibility, at any rate, varies with the kind and the degree of the deficiency.*

Perhaps the most trying case we are called on to deal with amongst children mentally abnormal—though, indeed, there may be but little evidence of

* "Legal Responsibility of Educated Imbeciles," G. E. Shuttleworth, *Journal of Mental Science*, vol. xxix., p. 467; "The Problem of the Morally Defective," W. A. Potts, *Lancet*, October 29, 1904.

intellectual deficiency—is that of the **moral imbecile.** The despair of his parents, the *bête noir* of the institution, the perplexing puzzle of the jurist—he seems to be the ill-fated product of inherited nervous instability and ancestral criminal instincts.

With regard to the class of moral defectives as found in the London schools, we venture to extract from Dr. Kerr's Report, presented to the London County Council Education Committee in May, 1909, the following exceedingly apposite paragraphs:

"**Moral Defectives and Permanent Custodial Treatment.**—The necessity for compulsory powers of detention in custodial schools till sixteen, and later for the rest of life, of certain moral defectives is a most pressing matter. For instance, just as we find in cases of pure word-blindness a defect of a particular region of the brain, sometimes as an hereditary failing which may occur in children normal in other respects, or combined with any amount of other defect, from mere dulness to low-grade mental defect, imbecility, or idiocy, so cases are found of morally defective children who vary in mental capacity from some cases which are exceedingly clever in other respects to children who are so bad as to be classed as imbecile. Very commonly through such individuals being on what might be considered as a lower scale of mental development than normal, the emotions are much more developed relatively than the intellectual qualities which give restraint, so that they are exceedingly plausible in speech, and have a peculiarly attractive gift of adapting themselves, smiles or tears being available with equal ease according to their environment. There are great differences in the way the defect is manifested. It is almost impossible yet to classify them, but a provisional arrangement might be made into—(1) Passive; (2) Active.

"1. PASSIVE CASES (ONLY PASSIVE TROUBLE IN SCHOOL CONDUCT).—(*a*) Children who have irregular but recurrent outbursts, showing moral defect in slight

degrees amounting to uncontrollable bad temper, often with a complete heedlessness of all correction or advice, and very often a tendency to roam or wander away. These cases are probably of an epileptic nature, and require detention, and are to be regarded as cases of disease.

"(*b*) Children who seem merely not to be amenable to discipline. This is a large class, and I think a very large proportion would be taught habits of obedience by regular and inflexible corporal punishment. Most of them are subjects for industrial training later on, but they often present other defects—*e.g.*, word-blindness.

"2. ACTIVE CASES (ACTIVE TROUBLES TO THE TEACHERS).—(*a*) Children who are only differentiated from the first of the class above by their violence and destructiveness in their outbursts of rage, almost unprovoked at times, and quite irregular. For the greater part of their time such children are inoffensive, sometimes clever, often dull, stupid, or even sullen, but in a rage behave as uncontrollable lunatics. They are, however, comparatively rare.

"(*b*) Murderous tendencies from pure cruelty (quarrelling, pinching, biting others, infliction of cruelty on young children, or killing of animals). In particular cases these children are very objectionable in school. Manslaughter has been committed by children of innocent, pleasant, and in one case almost angelic appearance. There is every grade of mental attainment among these children afflicted with this lust of cruelty.

"(*c*) Interference with the opposite sex shows itself in boys, but most objectionably in girls. There is every grade, from the natural attraction of the sexes to the most flagrant and offensive behaviour requiring the attention of the police. Here, again, mental capacity may vary from children who are quite normal in school-work to those who are low-grade mental defectives. This particular type of girl is most difficult to deal with. It is of vital importance to place them in residential

schools, and separate them from other children of the same age, because, though numerically few, they constitute a most vicious element, a leaven of evil among the girls with whom they are compelled to mix. It is principally for the sake of others that this policy is proposed.

"In the case of the low-grade girl it seems a pressing question whether, with her defects and her tendencies, she is not likely to become a mother in an exceedingly short time, and this is very probable. There is also the other question that very many of these children live in bad homes, and in some cases may be expected not to be shielded, if they are not even abetted, by their friends. The question of saving the last class of children from what is called moral contamination is hardly worth consideration. Apart from their bad school influence, the case of the low-grade girl with strongly marked sexual tendencies can scarcely be separated from the case of any other defective child. Many of them are good-looking, apparently healthy children, but all are likely in early adult life, within a comparatively short range of time, to propagate their defects, some classes perhaps earlier than the others, but for this particular reason there is hardly any ultimate benefit from segregating one class more than the others. Any segregation is, therefore, really on account of mental defect, not on account of purely moral defect; otherwise, the Standard VII. girl with immoral tendencies would also want segregation, which no one would propose. Moral defect, as pointed out, may exist with comparatively good mental development, and there is no suggestion of segregating such individuals, although they may be just as likely as others to add to the unsociable elements of the future population. It might also be suggested that in this particular class with very strong desires and passions for the other sex, exclusion from the satisfaction of these desires and passions by segregation would be an injustice which they have not deserved.

"A much more humane and scientific idea than mere segregation, and more economical to the State, would be to deprive such individuals of the objectionable powers and capacities, at the same time relieving them of the passions and desires before the time at which these develop."

The police in many large centres of population know children, members sometimes of respectable families, whom they shrink from prosecuting, but whom they cannot otherwise restrain from crime. Schools of the highest class are not unfrequently confronted with the problems that arise from the presence of an undesirable pupil of this type. He, or she, may combine the most innocent, sometimes engaging, external appearance with an inner depth of cunning and iniquity which requires to be experienced to be appreciated. The sudden impulses to mischief occurring in these cases are sometimes of an epileptoid character, and paroxysms may in such cases be cut short by bromides. But, as a rule, moral discipline is of little avail; punishment may be administered, and professions of penitence called forth, only to be forgotten as soon as the mental disturbance again recurs. The original author has a vivid recollection of three nice-looking children, sisters and brother, formerly under his care, who at times would appear models of propriety, while at others they had all the characteristics of little demons. With innocent expression they would furtively accomplish the most abominable mischief, and after meekly acknowledging the error of their ways, would emphasise their apology by a missile flung at the head of the person who had attempted to bring them to repentance! Such children would in old time have been called "possessed"; now they are classified

as cases of moral imbecility or juvenile insanity. Dr. Samuel J. Fort has described similar cases under the title of " Psychical Epilepsy ";* and in his Goulstonian Lectures for 1902 Dr. G. F. Still points out that a severe bout of convulsions in infancy is sometimes followed by arrest of moral development. Arson is a crime that has a special fascination for these degenerates, and so has the placing of obstructions on railways. The catastrophes that may result in consequence furnish a strong argument for permanent detention. It occasionally happens, however, that moral aberrations of a more transient character are met with in young people of neurotic heritage, whose unstable mental equilibrium has been upset by the strain of pubescence. Such are the cases in which a propensity to petty peculation develops itself in boys or girls who have previously borne good characters at a high-class school ; it is sometimes accompanied by other eccentricities of conduct, and is often apparently motiveless. Our experience has been that on removal to an appropriate environment many of these cases improve under tactful management, and when the stress of pubescent development has subsided, there may be a gradual restoration of moral control.

In other disappointing cases we find considerable improvement in intelligence and manual skill with actual deterioration of the moral sense. Intelligence and skill which have been acquired are, indeed, used for evil purposes ; and Dr. Kerlin, the former Superintendent of the Pennsylvania Institution, who paid much attention to this class, came to the conclusion " that to educate them often gave them added power for evil, and that they should not be allowed

* *Proc. Association Amer. Institution for Idiotic and Feeble-minded Persons*, 1894, p. 400.

to prey upon society." He claimed that moral imbeciles "should be treated in a class apart in buildings by themselves, as they affect the methods of living and training of the rest."* Dr. Jules Morel has, in an able communication to the Medico-Psychological Association,† advocated the establishment of special institutions, intermediate between reformatories and asylums, wherein "such persons should be objects of prophylactic treatment against crime." Similar views have been expressed by Dr. Barr, who succeeded Dr. Kerlin in charge of the Pennsylvania Institution. In his communication to the section of the Royal Commission on the Care and Control of the Feeble-minded which visited America, he stated, in reference to the patients under his charge at Elwyn: "Many of the children are absolute criminals. Some are the victims of circumstances, but the absolutely bad children we cannot do anything with. We have fifty to seventy-five of them. I think our Government should take up the question of these children. I should have these form a national colony on the bad lands of the West, to be taken care of under military discipline."‡

There is need for caution in institution arrangements for the mentally feeble class that *egoism*, which often springs from the solitary instincts of this class, be not pandered to, but rather that altruistic views should be enforced. The golden rule that even the feeble-minded should "do unto others as they would

* *Forty-first Annual Report Pennsylvania Training School*, Philadelphia, 1893.

† *Journal of Mental Science*, vol. xl., p. 599.

‡ *Report of the Members of the Royal Commission on the Care and Control of the Feeble-minded upon their visit to American Institutions* (vol. vii.).

be done by" should be inculcated; and happily such persons are often susceptible, not only to moral, but to religious influences. Their very simplicity leads them to accept without hesitation ideas of a Universal Father, who is at the same time an all-seeing God, of a loving Saviour, and of a sanctifying Spirit; and however imperfect may be their comprehension of these mysteries, there is no doubt that such notions tend to exert a wholesome restraining influence upon conduct. It is not our intention here to discuss the importance of religious teaching as the foundation of moral training; but no one who has had large and intimate experience of mentally deficient children will deny that in many the religious sense is not wanting. In this connection we are tempted to quote from the letter to his sister of an athetotic imbecile formerly in the Royal Albert Asylum, a letter written unprompted and unassisted. Referring to the Sunday service the poor lad writes:

"How beautiful it is to think of our dear Saviour who loved us all. He knows that I could not do anything for our dear Lord, and it makes me happy to think about Him, and to sing about Him as well. We must pray to God to make people happy in our dear Lord and Saviour, and the Holy Spirit. . . ."

We venture also, in conclusion, to quote from the testimony of a former teacher, describing the closing scene of the life of a pupil who verged upon the type of moral imbecility. She says:

"The dear little fellow, once all life and mischief, the *tormenting pupil* of my first school, was dying of consumption. Almost every night he called the Chief Attendant to 'hear his prayers,' giving as his reason that 'his Papa told him not to forget them.' At last, through increasing weakness, he could but lay his feeble

hands within those of Mr. M., and listen while he repeated the Lord's Prayer. . . . One Sunday, as we were watching by his bedside, there came a sudden change ; the end was evidently near, so we sent to the doctor to inform him. Turning towards us, with placid face, though with fast glazing eyes, the poor boy tried to raise himself in bed, then he stretched forth his wasted fingers, as if feeling for something. 'Where is God ?' he exclaimed, 'I want to find God ! I want to go to God !' Soon he fell back upon his pillow, and in a few minutes his spirit returned to God who gave it."

CHAPTER XII

RESULTS AND CONCLUSIONS

IN this closing chapter we propose to discuss the results which have accrued from the system of treatment and training we have endeavoured to describe, and to formulate some conclusions as to the value of the work.

" Once an idiot always an idiot " was for many ages the received doctrine on the subject, and we need not be surprised to find that this view still lingers with many otherwise well-informed people, who are not conversant with what has been done during the last seventy years to ameliorate the condition of mentally deficient children. Even Esquirol himself had, previous to Séguin's triumphant labours, penned these desponding words :—" Idiots are what they must remain for the rest of their life ; everything in them betrays an organisation imperfect or arrested in its development. We do not entertain the idea of its being possible to change this condition. No means are known by which a large amount of reason and intelligence, even for the briefest period, can be bestowed upon the unhappy idiot." Such pessimism, applied as it was to all grades of congenital defect—at that time comprehended in the French term *idiotie* —was happily soon proved to be quite uncalled for. In 1843 we find the elder Voisin, in a paper read before the French Academy of Medicine, referring in terms

of warm appreciation to Séguin's studies and successes. "While we are speaking," says he, "of the men who have occupied themselves with idiots, we should not fail to mention here with some distinction M. Séguin . . . appointed director of our idiot asylum at Bicêtre. . . . Already in 1838, and since, he has published the result of his efforts on behalf of a certain number of pupils, whose condition he has favourably modified." And Séguin himself, writing after thirty years' experience of this special work, says :* "Idiots have been improved, educated, and even cured; not one in a thousand has been entirely refractory to treatment; not one in a hundred who has not been made more happy and healthy; more than 30 per cent. have been taught to conform to moral and social law, and rendered capable of order, of good feeling, and of working like the third of a man; more than 40 per cent. have become capable of the ordinary transactions of life under friendly control, of understanding moral and social abstractions, or working like two-thirds of a man; and 25 to 30 per cent. have come nearer and nearer the standard of manhood, till some of them will defy the scrutiny of good judges when compared with ordinary young men and women."

The experience of institutions for training youthful idiots and imbeciles both in this country and in America goes to confirm the accuracy of Séguin's view on this subject. The statistics of the Royal Albert Asylum, Lancaster, gathered by Dr. Shuttleworth in 1890, with regard to the after-career of pupils discharged on completion of their seven years' training, showed that 10 per cent. were, or had been,

* *Idiocy and its Treatment by the Physiological Method*, New York, 1866.

earning wages; that 5 per cent. were remuneratively employed at home; and that 35 per cent., in addition, were capable of earning wages if suitable situations could be found for them. About 22 per cent. were reported to be more or less useful to their friends at home, while another 22 per cent. were said to be of little or no use; 29 per cent. had gravitated to workhouses and lunatic asylums; the remainder (8·5 per cent.) had died. It must not, however, be imagined that even the best of the above were in all respects equal to persons of average intelligence. Some residual peculiarity usually remains to handicap the feeble-minded in the race of life.

"It is not indeed to be expected that without some form of tutelage even the trained imbecile can hold his own in the outside world, and in the majority of cases it may be appropriately said:

> "'Tis not enough to help the feeble up,
> But to support him after."*

There is no doubt, however, that such support is rendered infinitely easier by methodical training, and the burden to the friends much lighter.

Before quoting further figures, it is necessary to explain that those of different institutions and societies can scarcely be compared; so much depends on the grade and type of mental defect selected. At the present time we have no generally accepted definitions, far less any universal standard. Under these circumstances statistics are chiefly of value as showing the possibilities and limitations.

The necessity for **after-care** has been established on *a priori* grounds; it is interesting to see the results.

* *Twenty-seventh Annual Report, Royal Albert Asylum*, p. 40.

For this purpose we will take the records of the Birmingham After-Care (Education) Committee, which was the first to undertake this work. Founded in 1901 by Mrs. Hume Pinsent, it is now able to formulate eight years' experience. The last annual report (dated June 25, 1909) states that of the 539 cases observed:

(i.) 97 are doing remunerative work; of these, 83 are earning wages varying from one shilling to twenty-three shillings per week. Average weekly wages, seven shillings.

(ii.) 5 work with their parents.

(iii.) 37 are living at home and doing no paid work; about half of these help in house-work, and in exceptional instances are of great service.

(iv.) 34 were dismissed from special schools through physical disability, or as incapable of improvement.

(v.) 107 have been transferred to normal schools. It is important, however, to record that only 64 of these were transferred by order of the Medical Superintendent. The others have drifted into ordinary schools, either here or elsewhere. The majority of the latter ought to have remained in a special school.

(vi.) 47 have been transferred to Sandwell Hall Training School for the Mentally Defective.

(vii.) 67 are in the workhouse or other institutions.

(viii.) 22 are dead.

(ix.) 123 have been lost sight of.

It is also stated that "of 307 feeble-minded persons who have left school and are still alive, and whose whereabouts are known, only 34·8 per cent. are earning wages at all, and only 5·5 per cent. are earning as much as ten shillings per week." It is explained that these percentages would be still lower had the "lost-sight-of cases" been included, these forming a class

who rarely, if ever, get remunerative work. "The After-Care Sub-Committee, therefore, after eight years' experience with defectives, would like to endorse their opinion, previously expressed, that for a large percentage of the feeble-minded permanent supervision is necessary for the following reasons:

"1. To enable them to contribute to their own support.

"2. To save them from harsh treatment at home and in the streets.

"3. To prevent their becoming drunkards, criminals, and prostitutes.

"4. To prevent their giving birth to children who can only grow up to be a burden to the community."

With these statistics from Birmingham we may compare the table on p. 185, extracted from the Report of the Education Committee of the London County Council (dated May, 1909), with reference to those discharged from the London Special Schools during the previous three years.

The figures in the opposite table, if somewhat more favourable than those from Birmingham, extend over a much briefer period, and, in the long run, no doubt will support the view of the necessity of permanent care for the majority of cases.

Mr. E. W. Locke, Superintendent of the Western Counties Idiot Asylum at Starcross, when giving evidence before the Royal Commission on the Care and Control of the Feeble-minded, said: "I think that during the last ten years about forty children have been placed out in the world. I have information from about twenty of them; several of those are earning their own living independently, but they were brilliant exceptions; the others were living at home, and making themselves of use, going out to work, for

SCHOOLS FOR THE MENTALLY DEFECTIVE (L.C.C.).

	Number of Children of whom Particulars were known at the end of the Year in which they left School.	Number of Children in Employment.	Number of Children in Column 1 lost sight of, but who were in Employment when the First Return was made.	Average weekly Wage of Children in Employment.	Number of Children out of Employment.	Number of Children in Column 1 lost sight of, but who were out of Employment when the First Return was made.
				s. d.		
I.—*Children who left during the year ended* 31.3.06—						
(*a*) Particulars on 31.3.06	253	162*	—	5 9	91	—
(*b*) ,, 31.3.07	200	151	21	7 0	49	28
(*c*) ,, 31.3.08	178	133	43	7 6	45	32
II.—*Children who left during the year ended* 31.3.07—						
(*a*) Particulars on 31.3.07	312	214	—	5 2	98	—
(*b*) ,, 31.3.08	227	193	19	6 3	34	36
III.—*Children who left during the year ended* 31.3.08—						
Particulars on 31.3.08 ..	279	212	—	5 11	67	—

* Report for 1909 states that, of these 162, 149 are still known and are earning an average of 7s. 11d. weekly.

instance, in gardens, or doing needlework at home, and so on." But he added, with regard to those who are discharged: "They ought not to go out into the world, any of them, never mind how competent they are to work." The subsequent comment by the Commissioners was: "This view is held by all our witnesses in regard to this branch of work."*

With regard to American experiences, we will quote from the paper of Dr. Walter E. Fernald, previously cited. He says:† "Each year a certain number of persons (trained in industrial work) go out from these institutions [for the feeble-minded], and lead useful, harmless lives. Some of the institutions where only the brightest class of imbeciles are received, and where the system of industrial training has been very carefully carried out, report that from 20 to 30 per cent. of the pupils are discharged as absolutely self-supporting. In other institutions, where the lower-grade cases are received, the percentage of cases so discharged is considerably less. It is safe to say that not over 10 to 15 per cent. of our inmates can be made self-supporting, in the sense of going out into the community and securing and retaining a situation, and prudently spending their earnings. With all our training we cannot give our pupils that indispensable something known as good, plain *common sense.* The amount and value of their labour depend upon the amount of oversight and supervision practicable. But it is safe to say that over 50 per cent. of the adults of the higher grade who have been under training from childhood are capable, under intelligent supervision, of doing a sufficient amount of work to pay for

* *Report of the Royal Commission on the Care and Control of the Feeble-minded,* vol. viii., p. 159.

† *Op. cit.*, p. 17.

the actual cost of their support, whether in an institution or at home."

In support of the claim for after-care, and as an embodiment of the most recent ideas in America on this question, we cannot do better than quote from the conclusions summarised by the members of the Royal Commission on the Care and Control of the Feeble-minded who visited that country:

"Most of the American institutions were started as schools for feeble-minded children, under the idea which prevailed that a large number of these could be educated so as to be able to take their place in the world alongside of their normal brothers and sisters. This idea has been modified by experience, and now it is the opinion of those whom we consulted that it is only a very small fraction of the feeble-minded who can stand alone, however excellent their education may have been. Two results flow from this. Firstly, although in some places the system of education still follows on the lines of that given in schools for normal children, in those institutions which appeared to us to be the most scientifically organised there is now a tendency to limit the instruction to such manual work as the feeble-minded are found able to perform, and as will afford them occupation and happiness as inmates of permanent working homes. Secondly, the opinion has now become general that the provision of schools for feeble-minded children must be accompanied by permanent homes for adults. The present schools have become congested with adults who have grown up in the school, and whom the managers have felt constrained to retain there for fear of the disasters which would have fallen upon the adolescent if turned adrift into the world. Hence, those interested in the American institutions have induced the State Legislatures to allow of the establishment of departments or branches for adults, into which they can draft the children who have passed school age, and also admit

from outside feeble-minded adult men and women whom the Poor Law or other public authority may think require the protection of a home. Expert opinion condemns as ineffective and wasteful an institution which lacks a custodial department or colony or other annexe for adults."

Nevertheless, it is not quite fair to conclude that the benefits of training institutions, as at present organised, are merely to be measured by appraising the proportion of those sent out able to earn their own living. This, of course, is a positive gain, but there are benefits, which we may call negative, hardly less appreciated by those on whom the care of the mentally deficient falls. That a child should no longer be uncleanly, mischievous or destructive in habits; that it should cease to disturb the peace of the household by discordant cries, and by untimely wanderings, are points which parents thankfully recognise; and if, in addition, it can be taught to undress and dress itself, to feed itself, and to behave with propriety, these results are by no means despicable, even from the economical point of view. It must not be forgotten that the charge of an untrained idiot at home usually monopolises the time of one of the older members of the family, who is thus prevented from earning wages; and without *judicious* training and discipline deterioration is pretty sure to occur. Even in the best-regulated families the care of a defective child is a constant anxiety; how much more in the labourer's cottage, where oftentimes only casual attention can be given to it? The relief to parents afforded by Institution treatment is well illustrated in the Report for 1894 of the Superintendent of the Eastern Counties Asylum. He gives a striking example of a mischievous imbecile, who "describes

with great glee how (before admission) he was left to mind the baby, and blacked its face all over with soot, so that when his mother returned she might think she had a black baby; how his little sister wanted some water, and he told her to drink out of the kettle on the fire, by which she nearly lost her life; and how he was turned out of the Parish Church, during service, for pricking a boy with a pin, so that he yelled out and disturbed the whole congregation!"

In the same Report* reference is made to the desirability of continued kindly supervision, even of cases discharged capable of earning their own living. "On sending them out into the world" (writes Mr. Turner), "they are looked on as fully responsible for their actions, although their power of reasoning is undoubtedly defective. One of our old boys who had been steadily earning his living for the last two years, and against whom there had been no complaint, was sent by his master to take up potatoes in his shepherd's garden. The shepherd's wife gave him some home-made wine early in the morning, and afterwards locked the door and hung up the key within reach, telling him that she was going out for the day. Knowing him as I did, it seemed to me the most natural thing in the world for him to take the key, and help himself to more wine, and afterwards to some money lying in a drawer. When the woman returned at night and was told by her neighbours what had occurred, the lad was charged with housebreaking, and no consideration was shown to him, although it was known that he had been for six years the inmate of an idiot asylum. Fortunately, the magistrates dismissed the case, and his master was

* *Thirty-sixth Annual Report, Eastern Counties Asylum for Idiots*, 1895, p. 45.

kind enough to take him back, saying that he was as good a workman as he wanted." For improved cases, able to take situations on leaving Training Institutions, it seems very desirable that there should be established in all parts of the country some organisation of philanthropic persons willing to exercise a friendly supervision, such as the After-Care Committees in London, Birmingham, and other English centres, and certain Continental cities.* This is, of course, fully provided for in the recommendations of the Royal Commission on the Care and Control of the Feeble-minded. As exemplifying the value of assistance on these lines, we might refer to the operations of the Société Protectrice de l'Enfance Anormale in Belgium, and to the Fürsorge system exercised in Saxony with regard to those discharged from Training Institutions for the blind. Without going abroad, however, we may say that the splendid results achieved by the Edgbaston General Institution for the Blind are largely due to the fact that there is after-care, while work is arranged for those who have been trained.

Notwithstanding all the drawbacks of the existing system, we have known some remarkable instances of permanent improvement resulting from training. A former institution pupil, an example of the class now designated "mentally feeble" as distinguished from imbecile, though for a period an inmate of the Royal Albert Asylum, became, under instruction, an expert joiner, and (what was even more remarkable) from being a very imp of mischief grew up into a well-conducted, self-reliant youth, and ultimately emigrated to one of our colonies. When last heard of, he was practising his trade in a leading city, and in a

* *Treatment of Feeble-minded: Question of After-Care.* Shuttleworth, 1904.

letter home reported himself as doing well, business being brisk in consequence of a conflagration which had recently occurred! In another instance of mild imbecility, the result of an injury in infancy, treated at the Royal Albert Asylum with great benefit, a girl, after discharge, got respectably married, and is said to be an excellent housewife.

It is remarkable that of near a thousand discharged patients who had passed under observation at the Royal Albert Asylum the two just mentioned are the only instances in which we have known marriages occur. It has, indeed, been urged as an objection to educating mentally deficient children, and fitting them for work in the world, that they would be thereby encouraged to marry, and, in consequence, there would be a risk of multiplying mental defect in the progeny. Our experience, however, does not altogether support this view. It is quite true that the mentally defective, when left to themselves, do produce, both in and out of wedlock, a considerable number of children, many of whom exhibit the same weakness as their parents. Dr. Potts, when working at Stoke-on-Trent for the Royal Commission on the Care and Control of the Feeble-minded, collected clear evidence on this point. It does not, however, hold good to the same extent in the case of those who have had judicious training in such an institution as the Royal Albert Asylum. In one case, that of a youth who, after a long period of institution training, had become an industrious labourer, and was earning eighteen shillings a week, we ventured to ventilate the subject of marriage. The young man had been telling us how, in addition to paying for his board, he had been able to accumulate a fair amount in the Post-Office Savings Bank. "Well," we suggested tenta-

tively, "perhaps you are saving up against getting married." "Nay, nay, doctor," was the reply, "it's hard enough for a feller to keep hisself, let alone bothering with a girl!" Such philosophy as this is rarely met with in the social class to which this youth belongs, or we should hear less of improvident marriages. The effect of judicious training seems to be to impress upon the improved imbecile that he is not quite like other men, and must not undertake the responsibilities of married life. Certainly, the net result of training is to diminish the risk of transmitting the evil to another generation, inasmuch as moral principles are instilled which have a restraining influence on conduct. Moreover, the very fact of healthy occupation tends to keep in check the animal passions, which are apt to run riot when the adolescent imbecile is unemployed. This is one, amongst other reasons, for the establishment of permanent industrial homes like those belonging and affiliated to the National Association for the Feeble-minded.

Considerable experience in the training of mentally peculiar children of the well-to-do class has convinced one of the authors of the benefit resulting from appropriate education commenced at an early age, if due care be taken to provide them after school life with occupations suitable to their capacities under some degree of judicious supervision. He could point to cases in which artistic and musical talents have been developed in such a way as to render subsequent home life resourceful and no longer a burden to the relatives, and to others in which occupation in such pursuits as horticulture and farming has furnished a useful career.

Several years have now elapsed since Dr. Shuttleworth insisted on the duty incumbent on our County

Councils to make specific provision — apart from lunatic asylums—for young imbeciles, not only on philanthropic, but also on economical, grounds.* So far, however, little has been done. In 1897 a combination between the Chorlton and Manchester Boards of Guardians was approved by the Local Government Board for the establishment of an institution for "imbecile paupers, and persons who may be insane or suffering from epilepsy, and might be relieved in the workhouses of Poor Law unions." In 1906 the Birmingham, Aston, and King's Norton Boards combined to provide a joint colony for "(1) epileptic persons who, being chargeable to one of the combined unions, have not been certified as lunatics; and (2) feeble-minded persons who, being chargeable to one of the combined unions, have not been certified as lunatics; and (*a*) who, by reason of mental deficiency, are incapable of receiving proper benefit from ordinary instruction, or are incapable of using ordinary means or precautions for protecting themselves from injury or improper usage or treatment, or are incapable of maintaining themselves by work; and (*b*) who are, in the opinion of a medical officer of a workhouse of any of the combined unions, suitable persons for treatment in the joint workhouse." The Croydon, Kingston, and Richmond unions have also obtained an order from the Local Government Board empowering them to combine to provide joint workhouses for a similar purpose.† These isolated efforts are, however, utterly inadequate for the needs of the whole country; it is doubtful if they are even sufficient for their own districts. The Monyhull colony was opened two years ago by the unions in the City of Birming-

* *Journal of Mental Science*, xli. 640.

† This order has recently been revoked.

ham, and is practically full; yet the Birmingham After-Care Committee, in their Report for 1909, say:

"The list which, however, we keep of all imbecile cases of which we have any knowledge now amounts to 135. In urgent cases an endeavour is made to get them taken by the Guardians, but the attempt is often unsuccessful, largely because the parents refuse to apply. The great majority are, therefore, still without the care and control they so urgently need. This is not only deplorable for them, but means also wearing out the overburdened mother, and often spoiling the lives and chances of normal brothers and sisters."

The late Dr. Milson Rhodes, Chairman of the Chorlton Board of Guardians, has repeatedly pointed out that the want of proper provision for these cases throws a very heavy burden upon the poor-rate. This point was clearly established by many others who gave evidence before the Royal Commission on the Feeble-minded, and has also been commented on by the recent Royal Commission on the Poor Law.

The history of legislation for the benefit of *mentally defective* as distinguished from *imbecile* children has already been given, and we have now had some sixteen years' practical experience of special classes for exceptional children in elementary day-schools. We think we can fairly claim that, where tried, they have filled up a *lacuna* in the scheme of national education. In the words of the Report of the Royal Commission on the Care and Control of the Feeble-minded:

"It [*i.e.*, the establishment of special schools] gave to those interested in education the first opportunity of trying what could be done for these children on day-school lines and under a special curriculum. Whether the number of those who, when they left school, could materially support themselves were few or many, it

helped to make the larger number of the children cleaner in person and habits, more orderly and more moral; it did this where the parents cared for their children and wished to do the best for them, and it did it, as far as might be, where the parents were careless and inconsiderate of their children's welfare. The scrutiny of the lives and mental condition of children, made in consequence of the investigations of Dr. Francis Warner, Dr. Shuttleworth, and others, led to the passing of the Act; and the Act itself has been instrumental in producing still further inquiries of the same nature."

The Report then goes on to show that it might not be altogether wise to continue simply on the same lines, and merely make the Elementary Education (Defective and Epileptic Children) Act, 1899, compulsory. It explains that the demand which the Act first created has assumed larger proportions.

"Schooling* in personal habits was found to be the first step in education. Then, more and more, it was made evident that the intelligence was roused through the hands and eyes working together in making or doing some actual thing, rather than by the secondary and more abstract accomplishments of reading, writing, and arithmetic. This suggested great changes in teaching. And now, in the opinion of many, the simple 'occupations' of the earliest years of schooling should develop into systematic industrial teaching, while the 'scholastic' teaching should become entirely subordinate, and, indeed, in some cases should be discontinued. But, as we have seen, criticism has gone further still. Analysis has shown that the special school by itself is largely unserviceable, from the point of view of the after-life of the child. The feeble-minded child can, in the main, become only a feeble-minded adult, educated into a rather better routine of thought and habit.

* *Report of Royal Commission on Care and Control of Feeble-minded*, p. 103, par. 338.

If special education is required on his behalf in his school-days, special care will probably be necessary for him when he has left school; and, moreover, later on in life. All this, by degrees, the Act of 1899 has enabled many to learn."

Hence the idea that—

"either the special classes* will become classes for the dull and backward, from which the feeble-minded, except, possibly, those who are of the very highest type, will, by degrees, be excluded; or, as at Leicester, new classes for the backward will be started, and the present classes for the feeble-minded will be continued as a kind of lowest class of all, and will be supplemented to a much larger extent by institutional care of some kind. According to our judgment, this 'backward' class should remain under the direct control of the education authorities, for the children in them could not be certified; while the children who are or may become certifiable as mentally defective should fall within the province of the Committee for the Care of the Mentally Defective, who, either directly or by contract with the education authorities, should provide for them."

In the Report (Part II.) of the L.C.C. Education Officer for the year ending March 31, 1908, it is estimated that of the 7,768 mentally defective children (including also mentally defective epileptics, blind, deaf, and physically defective, with 663 classified as imbecile) under the purview of the London School Authority, 4,373 would probably be not certifiable under the recommendations of the Royal Committee, and 3,395 certifiable.

The system of special instruction for mentally defective children carried on under the Act of 1899 has necessarily undergone considerable modification

* *Report, Royal Commission*, p. 108, par. 350.

in the course of its development. In the early days of its organisation there was perhaps a tendency to model it too much on the lines of the infant school, with which both teachers and inspectors were practically familiar. Experience, however, soon convinced those engaged in the work that between the normal infant of five and the "crystallised infant" of ten there were essential differences, which had to be provided for in the curriculum; and as time went on the paramount importance of hand-work as compared with mere book-work was increasingly recognised. In the Regulations issued by the Board of Education in July, 1904, it was laid down that "not less than six hours of manual instruction must be given weekly to each child in a certified school or class for defective children," and the following schedule of "Suitable Forms of Manual Instruction for Defective and Epileptic Children" was issued in 1907:*

(*a*) *Younger Children*—	(*b*) *Older Boys*—
Bead-threading.	Drawing and design.
Drawing.	Woodwork and carpentry.
Paper-folding.	Tailoring.
Paper-tearing.	Shoemaking and repairing.
Paper-cutting and mounting.	Cardboard modelling.
Paper-mat making.	Chair-caning.
Clay-modelling.	Gardening and farm-work.
Plasticine-modelling.	Household employments.
Macramé-work.	Mat and rug-making.
Netting and other string-work.	Repoussé.
Kindergarten sewing.	Bent-iron work.
Wood-strip work.	
Pith-cane work.	

* *Regulations applicable to Schools for Blind, Deaf, Defective, and Epileptic Children.* Wyman and Sons. 1907.

Older Boys (continued)—
Printing.
Baking.
Basket-work.

(*c*) *Older Girls*—
Cookery.
Needlework, plain and fancy.
Laundry-work.

Older Girls (continued)—
Housewifery.
Knitting.
Mending.
Machine-sewing.
Drawing and design.
Basket-work.
Chair-caning.
Gardening.

Other forms of manual instruction may be submitted for approval.

Whilst a minimum of six hours weekly is fixed for manual instruction, no maximum is laid down, and, as a matter of fact, as much as fifteen hours has been approved by the Board. The trend of alteration in Special School time-tables is in the direction of allotting a larger portion of time for manual training, and, especially in the case of older children, giving it more of a practical industrial character, such as will help the pupil after school age to earn a living. In London a step in advance has been made by the establishment of ten special centres, under male teachers, for elder boys, the work in which is mainly industrial. It is intended also to start two similar centres of industrial training for girls between thirteen and sixteen—one in the north and one in the south of London. Conveyance has, of course, to be provided for pupils residing at a distance from these centres, and in one district (Brixton) a residential home for thirty-two elder boys has been provided.

The advantage of favourable home conditions, where habits of order and good discipline can be enforced, is very obvious in the case of mentally defective children. The outstanding instance at the

present time is the Sandlebridge Residential School and Home of the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded, where some 200 boys and girls are in residence, about 160 being of school age. As the time-table there has some distinctive features, to which the Board of Education have assented, it may be of interest to introduce it in this connection (see pp. 200 and 201).

By way of comparison, we may also reproduce a specimen time-table from a London day-school, handed in by Mrs. Burgwin, L.C.C., when giving evidence before the Royal Commission (see pp. 202 and 203).

It will be remembered that, while the London day-school has to do its best to fit its pupils for any casual opening in industry that may open up after school age, the lot of those at Sandlebridge is permanently assured, occupation more or less remunerative being found for them in the colony itself. From the last published Report* we find that 14 boys were working on the farm, 17 in the garden and greenhouses, and 36 girls in laundry and housework; and that the farm and gardens are credited with a profit of £565 during the year. A grant of £514 was received from the Board of Education in aid of expenditure on those of school age; but 34 were over sixteen, and the proportion of older inmates will naturally increase from year to year. The present cost per head is about £29 per annum.

The Board of Education, in its "Revised Instructions," 1898, p. 13, recognised the necessity of a special organisation in elementary schools for the

* *The Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded: Eleventh Annual Report*, 1909.

SANDLEBRIDGE TIME-TABLE.

MORNING.

Day.	9.30–9.55.	9.55–10.20.	10.20–10.45.	10.45–11.0.	11.0–11.25.	11.25–11.45.	11.45–12.0.
Monday ..	Registers, prayer, Scripture	Reading, articulation, word-building	Free drawing	Recreation	O. Arithmetic Y. Number	Nature Lesson	Marching.
Tuesday ..	Registers, prayer, Scripture	O. Arithmetic Y. Number	Writing	Recreation	Reading, articulation, word-building	Conversation on Natural History	Physical exercises
Wednesday	Registers, prayer, Scripture	Reading, articulation, word-building	Writing	Recreation	Shop lesson or number	Free drawing	Ball game
Thursday	Registers, prayer, Scripture	O. Arithmetic Y.	Writing	Recreation	O. Spelling Y. Word-building	Physical exercises	Singing and repetition
Friday ..	Registers, prayer, Scripture	O. Dictation Y.	O. Arithmetic Y.	—	O. Basket-weaving, rug-work Y. Paper-folding	O. Reading Y. Articulation, word-building	Marching

O.—Older Class. Y.—Younger Class.

AFTERNOON.

Day.	1.55–2.	2–2.45.	2.45–3.	3–3.30.	3.30.
Monday ..	Registers	O. Folding clothes Stocking darning O. and Y. Needlework	O. Folding clothes Recitation and Nature talk	O. Rug-work Y. Clay modelling	Dismissal
Tuesday ..	,,	O. Folding clothes Stocking-darning O. and Y. Needlework	O. Folding clothes Gardening O. and Y. Singing	O. Gardening Manual occupation (varied) Y. Clay-modelling	,,
Wednesday	,,	O. Rug-work Y. Cube-building	O. Gardening Y. Singing and recitation	O. Gardening Y. Drawing	,,
Thursday	,,	O. Drawing Y. Drawing (patterns)	O. Cleaning spoons Rug-work Y. Recitation	O. Cleaning spoons Rug-work Y. Clay-modelling	,,
Friday ..	,,	(2.30) Needlework Recitation	O. Cleaning school O. and Y. Stories on natural history	O. and Y. Mat-weaving	,,

O.—Older Classes. Y.—Younger Class.
The Boys receive Manual Instruction in Wood-work on Saturday afternoons.

MORNING.

	9.30 to 9.50.	9.50 to 10.	10 to 10.30.	10.30 to 10.45.	10.45 to 11.15.	11.15 to 11.30.	11.30 to 12.
Monday	School opened with Prayer, followed by lessons in Holy Scripture	Drill	Reading	Recreation in playground, weather permitting. Games taught	Arithmetic	Singing, chiefly Voice Training, from Modulator	Writing
Tuesday			Reading		Arithmetic		Object Lesson
Wednesday			Reading		Arithmetic		Writing
Thursday			Reading		Arithmetic		Object Lesson
Friday			Reading		Arithmetic		Writing

TIME ALLOTTED TO EACH SUBJECT.

	Hrs.	Mins.		Hrs.	Mins.		Hrs.	Mins.
Holy Scripture	1	40	Number	2	30	Recitation ..	0	30
Reading ..	2	20	Drill	0	50	Object Lesson	1	0
Writing ..	1	30	Singing	1	45	Recreation ..	2	30

AFTERNOON.

2 to 3.	3 to 3.15.	3.15 to 3.30.	3.30 to 4.	4.
BOYS— Seniors: Manual Training until 4 Juniors: Macramé or Wool-work GIRLS— Seniors: Laundry till 4 Juniors: Same as Boys		Singing	Drawing	Prayers and Hymns. School closed
BOYS— Seniors / Juniors } Cane-weaving GIRLS— Seniors: Cookery till 4 Juniors: Cane-weaving		Recitation	Drawing	
BOYS— Seniors: Laundry till 4 Juniors: Cardboard Modelling GIRLS— Seniors / Juniors } Needlework	Recreation	Singing (Words of songs taken in Hall)	Drawing or Ball Games	
BOYS— Seniors: Cookery till 4 Juniors: Cane-weaving GIRLS— Seniors / Juniors } Cane-weaving		Singing	Drawing	
BOYS— Seniors / Juniors } Brush-work GIRLS— Seniors / Juniors } Needlework		Recitation	Varied Occupation	

OCCUPATIONS.

	Hrs.	Mins.		Hrs.	Mins.
Boys, Senr.	6	30	Girls, Senr.	6	15
Boys, Junr.	6	15	Girls, Junr.	6	15

instruction of children backward from neglect. It is to be hoped that many other centres will soon follow the example of Leicester, where new classes for the backward have been started, leaving the present classes for the feeble-minded to be appropriately organized for the special necessities of those truly mentally defective.

Dr. Kerr, the able Chief Medical Officer (Education) to the London County Council, has repeatedly advocated the institution of "Intermediate Schools" for the class referred to above. In his Reports for 1905 and 1906 he lays stress upon the fact that at least "10 per cent. of the school population were, from reasons either of a permanent or of a chronic but temporary nature, attending school under such conditions that the work of the ordinary school is almost wasted on them, if not in many cases actually harmful.

"This is the more required in that large numbers of children who make little progress in school, and who would greatly benefit by manual work, under the present conditions never reach the standards in which manual work becomes part of the ordinary school course. They may pass their whole school-life and, for want of scholastic attainments, never see the inside of a manual training-room.

"The cases of children already referred to, not blind, but yet unfit for the continuous ocular strain of school-work; the children with aural defects; the simply debilitated children; children backward through repeated or prolonged absence from zymotics, tubercular and parasitic diseases; the children who do not learn to read; and the considerable mass who, although not actually 'mentally defective,' are yet of such a low grade mentally that they are neither capable nor worth the effort of being raised to the ordinary elementary school standard—for these simpler schools are required, in which objective teaching will to a great degree replace the intellectual

work of the ordinary school, and its ideals of literary attainment be very considerably lowered. Such intermediate schools are the basis of the Mannheim School system. Quite apart from the medical aspect, this system would repay investigation on the spot by a purely educational expert."

Dr. Kerr further suggests that such schools might be designated " Fourth-Standard Schools," and the attainment of ordinary scholastic Standard IV. be regarded as their limit in such matters as reading and writing; that not more than thirty should be instructed in one class; that no books should be used, blackboard writing and printing being substituted; that arithmetic should be taught orally and objectively; and that handwork and drill should form a considerable proportion of the school time-table. Thus, practical training for the needs of life would be secured for many who are either neglected or unnecessarily relegated to schools for mentally deficient.

Of results attained in the Residential Homes charitably founded for feeble-minded girls beyond school age, it must suffice to say that in some of those longest established an appreciable portion of income is derived from payments for the work of the inmates. Thus it has been calculated that at the Homes of Industry, established near Birmingham in 1892 by the late Miss Stacey, for feeble-minded girls, more than 2s. per head per week is on the average made by the labour of the 45 inmates in aid of maintenance, the weekly rate for which is about 8s. 9d. It was stated, however, in her evidence before the National Committee, that, although these Homes are mainly custodial (one being for innocents and the other for girls of feeble mind who have had a " first fall "), out of 101 discharged for various reasons, not more

than 3 were really fit to return to ordinary life. The industries carried on in the Homes consist principally of laundry-work and of mat and rug making. The aggregate industrial profits of the two Homes amounted in the year 1905 to £210 out of an aggregate income of £854.

The results obtained by more recent homes, if less successful financially, are distinctly encouraging. Thus the National Association Report of Alexander House (a working home for 19 girls over fourteen at Hammersmith), after eight years' working, stated "There are now 8 girls in service, who are regularly visited. Of these, 4 are going on well; the others leave their situations frequently, their mental deficiencies making them unable to work steadily for any length of time." Further experience has, however, proved the need for permanent care in the majority of cases.

For a long time no provision had been made other than in imbecile asylums for adolescent males of feeble mind, but in 1897 the National Association opened a small farm for the employment of 15 youths. The inmates have lately been removed to a fine estate of 107 acres near Hildenborough, Kent, where they form the nucleus of a comprehensive establishment for both sexes to be known as "the Princess Christian's Farm Colony." It is intended that there shall also be accommodation for adults as well as children at the institution which was opened in 1909 at Stoke Park, near Bristol, by the Rev. H. N. Burden.

Did space permit, it would be easy to give proofs of individual improvement resulting from these and similar homes (of which a list will be found in Appendix B); but for particulars the reader is referred to the Reports of the Homes, and to the publications of the National Association for the

Feeble-minded, to be obtained at their offices, 72, Denison House, Vauxhall Bridge Road, S.W.

The question of legal detention in such voluntary homes as we have described is one of the problems of the day. In spite of the difficulties of abridging the liberty of the subject in this land of freedom, it seems to us that even the homes for the higher grades of the feeble-minded—as distinguished from registered Imbecile Institutions—ought not to depend solely on the spirit of content and attachment which a well-ordered establishment and kind treatment will foster. There must, of course, be a certain amount of latitude, and each case must be judged on its merits, taking a wide purview. No one can reasonably contend that every case of mental defect should, or ought to be, segregated, but there is no doubt that in the interests of society a permanent home, apart from the ordinary population, is in the majority of feeble-minded cases a desideratum. It must never be forgotten that mental feebleness is, as a rule, hereditary, and abundantly transmissible to another generation. The movement set on foot in the North of England by the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded is, therefore, to be highly commended from this point of view. To quote the words of Miss Dendy (the founder of this Society):

"Permanence in the care of the feeble-minded would be ultimately a great saving to the community. As things are now, the boys for the most part become criminals, and are convicted over and over again. Sometimes in gaol and sometimes out, they grow up through a wretched and degraded youth to an equally wretched and degraded manhood, and die leaving behind them offspring to carry onthe miserable tradi-

tion. The story of the girls is better known than that of the boys, but it is not really more terrible, except so far as physical suffering is concerned, and physical suffering is the least part of the evil."*

It seems unnecessary, in face of the investigations and conclusions of the Royal Commission, to labour the question of the need for permanent care of the vast majority of the certified "imbeciles and idiots" for whom the Registered Institutions (such as Earlswood and the Royal Albert Asylum) have during the last half-century done so much. The managers of these institutions would be the first to admit the desirability of their being enabled to supplement existing arrangements by custodial provision, but such an extension of their scope would seem to be beyond what may reasonably be expected from charitable contributions, and calls for aid from the State. It is much to be hoped that a scheme of co-ordination of the various existing agencies may legislatively be devised, which, with the assistance of public funds, may meet the far-reaching necessities of the case without too stringent an interference with individual initiative and philanthropic enterprise. Too often State interference tends to stem the stream of private benevolence, and the cause of the mentally defective is one especially needing sympathetic treatment and generous personal service. As a question of vital national concern, there can be no doubt that it is the duty of the State to help in the work, not only of alleviating the condition of the present generation of the unfit, but, as far as may be, to prevent the procreation of such unfortunates in the future. Objection has sometimes been taken to the benevolent efforts of the last

* *Educational Journal*, September, 1889.

sixty or seventy years in favour of the mentally deficient, that they are antagonistic to Nature's law, expressed in the formula, "The survival of the fittest." We would submit, however, that the reclamation of these outcasts, and more especially the "setting of the solitary in families" (*i.e.*, in institutions), has not necessarily been inconsistent with our duties towards posterity, for it has aroused a scientific interest in questions of heredity previously imperfectly understood. As Dr. Saleeby well puts it in his recent work on "Parenthood and Race Culture," "the ideal of eugenics is to abolish the brutal elements of the struggle for existence, whilst gaining its great end." Let us by all means adopt every reasonable measure to prevent the perpetuation of the evil, but in the meantime we are responsible for those weaklings we have allowed to be born as fellow-members of the human family. It is not denied that individual lives, which, if left to themselves, would probably be extinguished in the struggle for existence, are by fostering care prolonged, perhaps contrary to the rigid principles of social economy. It may, indeed, be admitted that much that has been done for the idiot and imbecile, and even for the feeble-minded, can only be justified on the ground of that quality of mercy which is "nobility's true badge," and "blesseth him that gives and him that takes." May we not indeed in this, as in much other philanthropic work which tends to soften the asperities of Nature's laws, endeavour humbly to follow in the footsteps of Him of whom it was foretold that "A bruised reed shall He not break, and the smoking flax shall He not quench"?

LATEAT SCINTILLULA FORSAN!

APPENDIX A

PUBLIC AND CHARITABLE INSTITUTIONS IN GREAT BRITAIN AND IRELAND FOR MENTALLY DEFICIENT CHILDREN AND ADULTS.

IDIOTS AND IMBECILES.

A. For Pauper Children—

1. Metropolitan Asylums Board. *Darenth Schools*, Dartford, Kent.
2. *Middlesex County Asylum*, Wandsworth. (Annex for Imbeciles.)
3. Separate Department at *Northampton County Asylum*, Berrywood.
4. Separate Department at *East Sussex Asylum*, Hellingly.
5. *Winwick Hall*, Lancashire. (Boys only.)
6. *Stanley Hall*, Wakefield. (Boys only.)
7. *Western Counties Idiot Asylum*, Starcross, Devon. (Also receives cases on payment, and aided by charity.)

A limited number of pauper patients (from their own districts) are also received at the *Royal Albert Institution*, Lancaster, and the *Eastern Counties Asylum*, Colchester.

There are also special wards for Idiots at the *Hants*, *Kent* (Chatham), *Staffordshire* (Burntwood), *Durham*, and *Birmingham* (Rubery Hill) *Asylums*.

B. For Children and Others above Pauper Class (Charitable Institutions, receiving also Paying Cases)—

1. *Earlswood Asylum*, Red Hill, Surrey.
2. *Royal Albert Institution, Brunton House Branch*, and *Storey Home for Feeble-Minded Girls*, Lancaster.

3. *Eastern Counties Asylum for Imbeciles, etc.*, Colchester.
4. *Western Counties Idiot Asylum*, Starcross.
5. *Midland Counties Idiot Asylum*, Knowle, Birmingham.
6. *Magdalen Hospital School*, Bath.
7. *Scottish National Institution for the Education of Imbecile Children*, Larbert, Stirlingshire.
8. *Baldovan Asylum for Imbecile Children*, near Dundee.
9. *Stewart Institution for Idiotic and Imbecile Children*, Palmerston, Dublin.

C. For Pauper Adults—

1-4. The *M.A.B. Asylums* at Darenth, Caterham, Leavesden, and Tooting Bec.
5. The *Monyhull Colony*, near Birmingham.

"MENTALLY DEFECTIVE" OR "FEEBLE-MINDED" CASES ONLY.

A. Residential Schools certified by Board of Education (Charitable Foundations).

Locality and Designation.	Sex and Age of Inmates.
1. Cheshire: *Sandlebridge Schools and Colony*, Great Warford	M. and F. under 16 (also older cases for permanent care).
2. Middlesex: *Pield Heath House R. C. School*, Hillingdon East	M. and F. under 16.
3. Middlesex: *Littleton House Special*, Uxbridge	M. ,,
4. Staffordshire: *Sandwell Hall*, West Bromwich	M. and F. ,,
5. Sussex: *Hastings and St. Leonards Special*,* 48 and 49, Kenilworth Road, St. Leonards	Girls under 16; boys under 10.

There is also a certified Residential Home at *Acre Lane, Brixton*, for thirty-two boys attending Acre Lane L.C.C. Special School.

For mentally defective Deaf children there is a L.C.C. Residential School (certified) at *Homerton, N.*

* For *Defective Blind.* There is a separate house for *Mentally Defective.*

B. Residential Homes (Charitable Foundations).

Affiliated, Branch, or Managed by National Association for the Feeble-minded.

Homes and Addresses.	Sex, Age, and Class of Inmates.
1. *Princess Christian's Farm Colony*, near Tonbridge, Kent.	M. over 16 (*Guardians' Cases*, etc.), at present.
2. *Alexander House*, 48, Glenthorne Road, Hammersmith.	F. over 16 (*Guardians' Cases*, etc.).
3. *North Finchley Home*, Wolseley, Woodside Avenue, N. Finchley.	F., mothers and their infants (*Guardians' Cases*, etc.).
4. *Isabella Head Home*, 170, Coningham Road, Shepherd's Bush, W.	F. over 16 (*Guardians' Cases*, etc.).
5. *St. Mary's Home of Industry*, Painswick, Gloucestershire.	F. over 16 (*Guardians' Cases, some of better class*).
6 and 7. *Girls' Training Homes and Schools*, 44, Kenninghall Road, Clapton.	F. over 16 (*Guardians' Cases*, etc.); and under 16 (*School Cases*).
8. *Laundry and Homes of Industry*, Arrowfield Top, Alvechurch, Birmingham.	F. over 15 (*Guardians' Cases, "Innocent" Girls*, etc.).
9. *Laundry and Homes of Industry*, Enniskerry, Knowle, Birmingham.	F. over 15 (*Guardians' Cases, History of "first fall,"* etc.).
10. *Adcote*, Pilch Lane, Knotty Ash, Liverpool.	F. over 14 (*Guardians' Cases*, etc.).
11. *Ashton House*, Parkgate, Cheshire.	F. over 14 (*Guardians' Cases*, etc.).
12. *Chasefield Laundry Home*, Fishponds, Bristol.	F. over 14 (*Guardians' Cases*, etc.).
13. *Home of Industry*, Bow Villa, Morpeth.	F. over 14 (*Guardians' Cases*, etc.).
14. *Handford Home*, Ranelagh Road, Ipswich.	F., 8 to 18, on admission (*Guardians' Cases*, etc.).
15. *Walnut Tree Farm*, Holiday Home, Rendham.	F., 8 to 18 (*Guardians' Cases*, etc.).

Residential Homes—*Continued.*

Homes and Addresses.	Sex, Age, and Class of Inmates.
16. *Sunnyholme*, 155, King Richard's Road, Leicester.	F. over 16 (*Guardians' Cases*, etc.).
17. *Mary Carpenter Home*, Causeway, Fishponds, Bristol.	F. over 14 (*Guardians' Cases*, etc.).
18. *Oxford*, Cumnor Rise, Botley, Oxford.	F. over 14 (*Guardians' Cases*, etc.).
19. *Newcastle*, Monkton Hall, Jarrow-on-Tyne.	F. over 14 (*Guardians' Cases*, etc.).
20. *Helping Hand Home*, 59, Caversham Road, Kentish Town, N.W.	F., under 16 (attend special schools); over 16 (for after-care).

Other Residential Homes (Charitably Founded).

Homes and Addresses.	Sex, Age, and Class of Inmates.
21. *Stoke Park*, near Bristol.	Children and adults (both sexes).
22. *Sandlebridge Colony*, Cheshire.	(See No. 1. in list of *Residential Schools.*)

The majority of the above Homes may be regarded as intended for the *permanent* care of their inmates, and are certified or approved by the Local Government Board or Home Office.

Information as to Homes 1 to 20, and as to "After-Care Associations," may be obtained from the Secretary, *National Association for Feeble-minded*, Denison House, 296, Vauxhall Bridge Road, S.W.; as to Sandlebridge, from the Secretary, *Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded*, 13, Clarence Road, Withington, Manchester; as to Stoke Park and Sandwell Hall from the Secretary, *National Institution for Persons requiring Care and Control*, 14, Howick Place, Westminster, S.W.

An Official List of *Certified Special Schools* in England and Wales is issued annually by the *Board of Education*, and published by Wyman and Sons, Fetter Lane, E.C.

APPENDIX B

AMERICAN STATE PUBLIC INSTITUTIONS FOR "FEEBLE-MINDED."

(List kindly supplied by Dr. J. C. Carson, Syracuse, N.Y.)

State.	City.	Inmates (in Round Numbers).
California	Eldridge	750
Connecticut	Lakeville	300
Illinois	Lincoln	1,300
Indiana	Fort Wayne	1,200
Iowa	Glenwood	1,200
Kansas	Winfield	390
Kentucky	Frankfort	190
Maryland	Owings Mills	230
Massachusetts	Waverley	1,300
,,	Wrentham	50
Michigan	Lapeer	800
Minnesota	Faribault	1,100
Missouri	Marshall	470
Montana	Boulder	50
Nebraska	Beatrice	430
New Hampshire	Laconia	90
New York—		
Children	Syracuse	550
Women	Newark	730
Custodial	Rome	1,000
Randall's I. (City)	New York	920
New Jersey—		
Children	Vineland	370
Women	Vineland	190
North Dakota	Grafton	130
South Dakota	Redfield	150
Ohio	Columbus	1,500
Pennsylvania Eastern	Elwyn	1,080
,, Western	Polk	1,300
Rhode Island	Slocums	8
Washington	Medical Lake	170
Wisconsin	Chippewa Falls	1,050

COLONIAL INSTITUTIONS, ETC.

Dominion of Canada, Orillia, Ontario, 800 inmates.

There are also Institutions for Imbeciles in several of the British Colonies—*e.g.*, in Australia in connection with the Kew Asylum, Melbourne, and at Adelaide; and in South Africa in connection with the Grahamstown Asylum. A State Residential School for Mentally Defective Boys has been established in New Zealand (near Kurow, Otago).

SOME OF THE PRINCIPAL CONTINENTAL INSTITUTIONS FOR IMBECILES.

France. Bicêtre and Salpêtrière, Paris.
Germany. Dalldorf, Berlin.
„ Gladbach, Düsseldorf.
„ Langenhagen, Hanover.
„ Alsterdorf, Hamburg.
„ Oppellstrasse, Dresden.
„ Alice-stift, Darmstadt.
„ Neu-Erkerode, Brunswick.
„ Grosshennersdorf, Saxony.
„ Küchenmuhle, Stetten.
„ Niedermarsberg, Westphalia.
„ Scheuern, Nassau.
„ Stetten, Wurtemberg.
Norway. Thorshaug, Christiania.
„ Linden, Christiania.
„ Hop, Bergen.
Sweden. Stockholm, Lund, Upsala, etc.
Denmark. Gamle Bakkehus, Copenhagen.
„ Ebberödgaard, near Copenhagen.
„ Keller Institutes, Borköf, near Copenhagen.
Switzerland. Bremgarten, Aargau.
„ Regensberg, Zurich.
„ Kriegstetten, Solothurn.
„ Biberstein, bei Aarau.
Italy. Vercurago, Bergamo, and Rome, etc.

APPENDIX C

SPEAKING EXERCISES.

I. CONSONANTS.

Sound.	Phonetic.	Common Object.	Part of Body, etc.	Part of Dress, etc.
M.	Mam-ma	Mat, Man, Miss	Mouth, Muscle	Muff, Muffler, Mitten
P.	Pa-pa	Pen, Pin, Pipe	Palm (of hand)	Pin, Pocket
B.	Bab-ba	Bell, Box, Book	Bone, Bust, Brains	Bib, Bow
T.	Tat-ta	Table, Top, Tea	Toe, Tooth	Tie, Tape, Trousers
D.	Dad-da	Door, Doll, Desk	Dimple	Dress, Diadem
V.	Va-va	Velvet, View, Violet	Vein, Voice	Veil, Vest
F.	Fa-fa	Fan, Fire, Fish	Foot, Face, Finger	Fur, Frock, Flannel
L.	La-la	Lad, Lady, Lock	Lip, Limb, Leg	Lace, (E)lastic
R.	Ra-ree	Rag, Reel, Rail-road	Rib, (W)rist	Ribbon, Ring
S.	See-saw	Soap, Slate, Seat	Sole, Skin	Sock, Sash, Stocking
Z.	Za-zel	Zinc, Scissors	Hazel (Eyes)	Stays, Zone
Th.	The	Thimble, Thing	Thumb, Throat	Thread
Sh.	She	Shell, Shilling	Shoulders, Shin	Shoe, Shawl, Shirt
Ch.	Chick	Child, Chair	Chin, Chest, Cheek	Chain (of Watch)
J.	Jig	Ju-jube, Jug	Jaw, Joint	Jacket, Jewel
G (hard)	Gig	Girl, Gas, Gate	Gum, Gullet	Garter, Gaiter
K.	Cake	Cat, Kite, Colour	Calf, Cough	Coat, Cap, Collar
N.	Nanny	Net, Nut, (K)not	Nose, Nail, Neck	Necktie, (Knot)

II. SIMPLE VOWEL SOUNDS.

Vowel Sound.	Examples.
A (open) =(Ah)	Father
A (broad) =(Aw)	All (*Aw*ful)
A (short) =Ă	Cap, Tap
A (long) =Ā	Cape, Tape
O (short) =Ŏ	Cot, Knot
O (long) =Ō	Coat, Note
⌣ (short) =(⌣)	Foot, Wood
‾ (long) =(‾)	Boot, Food
U (short) =Ŭ	Tun, Fun
U (long) =Ū	Tune, Fume
E (short) =Ĕ	Bed, Fed
E (long) =Ē	Bead, Feed
I (short) =Ĭ	Bit, Fit
I (long) =Ī	Bite, Fight
Aspirate H	Hat, Hall
Double Letters W, Y	Wall, You
Diphthongs, ⌢, ⌢	Oil, Owl

[Arranged by Dr. Shuttleworth for use at Royal Albert Asylum. Reprinted from his article on "Education of Imbeciles" in Dr. Hack Tuke's "Dictionary of Psychological Medicine," by kind permission of Messrs. Churchill.]

APPENDIX D

BIBLIOGRAPHY

1. De l'éducation d'un Homme Sauvage, **Itard.** Paris, 1801.
2. Observations pour servir à l'histoire de l'Idiotie, **Esquirol** (*Maladies Mentales*). Paris, 1828.
3. Die Heilung und verhütung des Cretinismus, etc., **Guggenbühl.** Bern, 1835.
4. Résumé de ce que nous avons fait pendant quatorze mois, **Esquirol et Séguin.** Paris, 1839.
5. Traitement Moral, Hygiène et Education des Idiots, etc., **E. Séguin.** Paris, 1846.*
6. Articles on Idiocy in *Chambers' Edinburgh Journal*, by **Mr. Gaskell.** January and February, 1847.
7. Remarks on the Education of Idiots and Children of Weak Intellect, **W. R. Scott, Ph.D.** London, 1847.
8. Article by **Dr. Conolly** in *British and Foreign Medico-Chirurgical Review.* London, 1847.
9. Causes and Prevention of Idiocy (*Report to Mass. Legislature*), **Dr. S. G. Howe.** Boston, Mass., 1848.
10. Report of Commission created by King of Sardinia for Study of Cretinism. Turin, 1850.
11. Researches on Idiocy and Cretinism in Norway, **Dr. Stalst.** Christiania, 1851.
12. On the Possibility of Educating Idiot Children, **Dr. Ehrchricht.** Copenhagen, 1854.
13. Cretinism and Idiocy, **Dr. Blackie.** Edinburgh, 1855.
14. Idiot Training, **Rev. Edwin Sidney.** London, 1855.
15. Idiots and the Efforts for their Improvement, **Dr. L. P. Brockett.** Hartford, Conn., 1856.

* Reprinted by Dr. Bourneville in *Publications du Progrès Médical.* Paris. 1898.

16. Report of Commissioners on Idiocy in Connecticut (**Knight and Brockett**). Dorchester, Conn., 1856.

17. Handbook of Idiocy, **James Abbott.** London, 1857.

18. The Mind Unveiled, **Dr. Isaac N. Kerlin.** Philadelphia, 1858.

19. Method of Drill, Manner of Teaching Speaking, etc., used at Essex Hall, **E. Martin Duncan, M.B.** London, 1861.

20. Visit to Earlswood, and Second Visit, **Rev. E. Sidney, M.A.,** May, 1859, June, 1861. London, 1861.

21. Suggestions on Principles and Methods of Elementary Instruction, **Dr. W. B. Wilbur.** Albany, New York, 1862.

22. The Idiot and his Helpers, **W. Millard.** Colchester, 1864.

23. Idiocy : its Diagnosis and Treatment by the Physiological Method, **E. Séguin, M.D.** Albany, 1864.

24. The Training of Idiotic and Feeble-minded Children, **Cheyne Brady.** Dublin, 1864.

25. Idiot Asylums. *Edinburgh Review*, No. ccxlix., July, 1865.

26. Manual for the Classification, Training, etc., of the Feeble-minded, Imbecile, and Idiotic, **Duncan and Millard.** London, 1866.

27. Idiocy and its Treatment by the Physiological Method, **Ed. Séguin, M.D.** New York, 1866.

28. Remarks on Sluggish Mental Development educationally considered, **W. H. Mortimer.** London, 1868.

29. On the Education of the Imbecile, **Dora Greenwell.** London, 1869.

30. A Day at Earlswood, **J. C. Parkinson.** London, 1869.

31. New Facts and Remarks concerning Idiocy, **E. Séguin, M.D.** New York, 1870.

32. Two Cases of Microcephalic Idiocy, **G. E. Shuttleworth, M.D.** *British Medical Journal*, August, 1875.

33. Remarks on the Origin, Varieties, and Termination of Idiocy, **G. W. Grabham, M.D.** Earlswood, 1875.

34. Education and Training of the Feeble in Mind, **J. Langdon-Down, M.D.** London, 1876.

35. Notes of Visit to American Institutions for Idiots and Imbeciles, **G. E. Shuttleworth, M.D.** Lancaster, 1877.

36. Case of Microcephalic Imbecility, **G. E. Shuttleworth, M.D.** *Journal Mental Science*, October, 1878.

37. Some of the Cranial Characteristics of Idiocy. *Id. Trans. International Medical Congress*, 1881.

38. The Idiot: his place in Creation, **Sir Frederick Bateman, M.D.** London, 1882.

39. Types of Imbecility, **Fletcher Beach, M.B.** (*Medical Times and Gazette*). London, 1882.

40. An Address on the Education of Idiots, **George Pycroft.** Exeter, 1882.

41. The Physical Features of Idiocy, **G. E. Shuttleworth, M.D.** *Liverpool Med.-Chir. Journal*, July, 1883.

42. Is Legal Responsibility acquired by Educated Imbeciles? *Id. Journal Mental Science*, January, 1884.

43. The Health and Development of Idiots as compared with Mentally Sound Children. *Id. International Health Exhibition Literature*, vol. xi., p. 526. London, 1884.

44. Idiotophilus, **Pastor H. Sengelmann, Dr.** Norden, 1885.

45. Clinical Lecture on Idiocy and Imbecility, **G. E. Shuttleworth, M.D.** *British Medical Journal*, January 30, 1886.

46. The Relations of Marriages of Consanguinity to Mental Unsoundness. *Id. Journal of Mental Science*, October, 1886.

47. Mental Affections of Childhood and Youth, **J. Langdon-Down, M.D.** London, 1887.

48. Idiocy and Imbecility due to Inherited Syphilis, **G. E. Shuttleworth, M.D.** *Amer. Journal of Insanity*, January, 1888.

49. Weak-minded Children. *Id. Journal Mental Science*, April, 1888.

50. The Royal Albert Asylum and its Work, **Henry Hutton, M.A., M.B.** Lancaster, 1888.

51. A Course of Lectures on the Growth and Means of Training the Mental Faculty, **F. Warner, M.D.** Cambridge, 1890.

52. The Care of the "Mentally-feeble" Child (as distinguished from the "Imbecile"), **G. E. Shuttleworth, M.D.** London, 1891.

53. Neuroses of Development, **T. S. Clouston, M.D.** London, 1891.

54. Report on Physical and Mental Condition of 50,000 School Children, **F. Warner and others.** Parkes Museum, 1892.

55. Hack Tuke's Dictionary of Psychological Medicine. Articles on Idiocy, etc. (Pathology, **F. Beach.** Etiology, **Shuttleworth and Beach.** Treatment and Education, **Shuttleworth**). London, 1892.

56. The Feeble-minded Child and Adult. (Charity Organization Series.) London, 1893.

57. L'Idiotie, **Dr. Jules Voisin.** Paris, 1893.

58. The History of the Treatment of the Feeble-minded, **Walter E. Fernald, M.D.** Boston, 1893.

59. Psychopatische Minderwertigkeiten im Kindesalter **Trüper.** Gütersloh, 1893.

60. Dell' Educazione dei Fanciulli Frenastenici, **Prof. A. Gonnelli Cioni.** Lecco, 1893.

61. Causation and Early Treatment of Mental Disease in Children, **A. W. Wilmarth, M.D.** Chicago, 1894.

62. Rapport sur l'assistance des enfants idiots et dégénérés, **Bourneville.** Lyon, 1894.

63. Mentally-feeble Children: Treatment and Education of, **Fletcher Beach, M.B.** London, 1895.

64. New Medical and Surgical Methods in the Treatment of Mental Defects, **G. E. Shuttleworth, M.D.** Bristol, 1895. (In *Wright's Medical Annual.*)

65. Cases of Sporadic Cretinism treated by Thyroid Extract, **T. Telford-Smith, M.D.** *Jour. Mental Science,* April, 1895.

66. Some Physiological Factors in the Neuroses of Childhood, **B. K. Rachford, M.D.** Cincinnati, 1895.

67. Influence of Heredity on Idiocy, **Martin Barr, M.D.** *Jour. Mental and Nervous Diseases,* New York, 1895.

68. Studien über Klinik und Pathologie der Idiotie, **Karl Hammarberg.** Upsala, 1895.

69. The Brain of the Microcephalic Idiot, **D. J. Cunningham, M.D., and T. Telford-Smith, M.D.** *Scientific Trans. Roy. Dublin Society,* 1895.

70. Report on Scientific Study of the Mental and Physical Conditions of Childhood. London, 1895.

71. Amaurotic Idiocy, **Sachs.** *New York Med. Jour.*, May 30, 1896.

72. Pathogenesis of Epileptic Idiocy and Epileptic Imbecility, **W. L. Andriezen, M.D.** *Brit. Med. Jour.*, May 1, 1897.

73. The Mentally-feeble Child and How to Train him, **Fletcher Beach, M.D.** *Pediatrics*, December, 1897.

74. Infantile Cerebral Degeneration with Symmetrical Changes at the Macula, **E. C. Kingdon, M.B., and J. S. Risien Russell, M.D.** *Med.-Chir. Trans.*, vol. lxxx., p. 86.

75. Kliniske og Aetiologiske Studien over Psykiske Udviklinsmanger hos Born, **Carl Looft.** Bergen, 1897.

76. The Study of Children, **F. Warner, M.D.** New York and London, 1897.

77. Sclerose cérébrale hemisphérique, **Dr. Bourneville.** *Archives de Neurologie*, 1897.

78. Ueber diffuse Hirnsklerose, **O. Heubner.** *Charité Annalen*, 1897.

79. The Paralytic Type of Idiocy and Imbecility, **T. Telford-Smith, M.D.** *Pediatrics*, vol. v., No. 12, 1898.

80. Diagnosis and Prognosis of certain forms of Imbecility, **John Thomson, M.D.** *Scottish Medical and Surgical Journal*, March, 1898.

81. The Mental Affections of Children, Idiocy, Imbecility, and Insanity, **William W. Ireland, M.D.** London and Edinburgh, 1898.

82. Clifford Allbutt's *System of Medicine*, vol. viii. Article on Idiocy and Imbecility, by **Fletcher Beach, M.B., and G. E. Shuttleworth, M.D.** London, 1899.

83. Degeneracy, **Eugene Talbot, M.D.** London, 1898.

84. Letter-, Word-, and Mind-Blindness, **James Hinshelwood, M.A., M.D.** London, 1900.

85. Pathological Anatomy of Idiocy, **Beach, Bourneville, Mierzejewski, Shuttleworth.** *Transactions Paris International Medical Congress*, 1900.

86. Psychologie de l'Idiot et de l'Imbecile, **Dr. Paul Sollier,** Paris, 1901.

87. Mentally Deficient Children, **W. A. Potts, M.D.** *Birmingham Medical Review,* October, 1901.

88. Insanity in Imbeciles, **A. F. Tredgold, M.R.C.S.** *Journal of Mental Science,* January, 1903.

89. Amentia, **A. F. Tredgold, M.R.C.S.** *Practitioner,* September, 1903.

90. On the Relations of Epilepsy to Amentia, **A. F. Tredgold, M.R.C.S.** *British Journal of Children's Diseases,* July, 1904.

91. The Problem of the Morally Defective, **W. A. Potts, M.D.** *Lancet,* October 29, 1904.

92. Mental Defectives: their History, Treatment, and Training, **Martin W. Barr, M.D.** Philadelphia, 1904.

93. The Diagnosis of Feeble-minded Children, **W. A. Potts, M.D.** *Midland Medical Journal,* January, 1905.

94. The Causation of Mental Defect in Children, **W. A. Potts, M.D.** *British Medical Journal,* October 14, 1905.

95. Special Training considered from the Physiological Standpoint, **A. F. Tredgold, M.R.C.S.** *British Journal of Children's Diseases,* October, 1905.

96. Some Forms of Congenital Aphasia in their Educational Aspects, **C. J. Thomas, M.B.** Leipzig, 1905.

97. Traitement Médico Pédagogique de l'Idiotie, **Dr. Bourneville.** Paris, 1905.

98. Functional Nervous Disorders in Childhood, **Leonard G. Guthrie, M.A., M.D.** London, 1907.

99. The Recognition and Training of Congenital Mental Defectives, **W. A. Potts, M.D.** *British Medical Journal,* May 9, 1908.

100. Some Types of Congenital Mental Defect and their Significance, **W. A. Potts, M.D.** *Transactions of the Society for the Study of Disease in Children,* 1908.

101. The Differentiation of Mentally Deficient Children, **G. E. Shuttleworth, M.D.** *Transactions of the International Congress School Hygiene,* 1908, p. 742 *et seq.*

102. Inherited Syphilis as a Factor in the Etiology of Mental Defect in Children, **G. E. Shuttleworth, M.D.** *British Journal of Children's Diseases*, April, 1908.

103. Tuberculosis in Infancy and Childhood, Edited by **T. N. Kelynack, M.D.** London, 1908.

104. The Relation of Alcoholism to Feeble-mindedness, **W. A. Potts, M.D.** *British Journal of Inebriety*, London, 1908.

105. Mongolism and its Pathology, **W. Bertram Hill, M.B.** *Quarterly Journal of Medicine*, October, 1908.

106. The Aphasias of Childhood and Educational Hygiene, **C. J. Thomas, M.B.** London, 1908.

107. Mental Deficiency, **A. F. Tredgold, M.R.C.S.** London, 1908.

108. Guide to the Clinical Examination and Treatment of Sick Children, **John Thomson, M.D.** Edinburgh and London, 1908.

109. Étude Anatomique de l'Idiotie Mongolienne, **M. L. Babonneix.** *Archives de Médicine des Enfants*, July, 1909.

110. Common Disorders and Diseases of Childhood, **G. F. Still, M.A., M.D.** London, 1909.

111. Physiological Variations in Children, **James Kerr, M.A. M.D.** *Medical Chronicle*, July, 1909.

112. Mongolian Imbecility, **G. E. Shuttleworth, M.D.** *British Medical Journal*, September 11, 1909.

113. The Diagnosis of Permanent Mental Deficiency in Infancy and Childhood, **C. Paget Lapage, M.D.** *Practitioner*, August, 1909.

114. Mental Deficiency in Children, **James Dundas, M.D., D.P.H.** *Practitioner*, September, 1909.

115. Family Amaurotic Idiocy without Characteristic Ophthalmoscopic Signs, **F. Parkes Weber, M.D.** *Proceedings of the Royal Society of Medicine*, February, 1910.

116. Den infantile Mongolisme og Tuberkulosen, **Dr. Hother Scharling.** Copenhagen, 1910.

REPORTS AND SERIALS:

Report of a Special Committee of the Charity Organization Society on the Education and Care of Idiots, etc. London, 1877.

Report of the Royal Commission on the Blind, the Deaf, etc. London, 1889.

Report of the Departmental Committee on Defective and Epileptic Children. London, 1898.

Report of Royal Commission on the Care and Control of the Feeble-minded (8 vols.). London, 1908.

Resultats du Dénombrement des enfants faibles-d'esprit en âge de fréquenter l'école (1ere partie), *Statistique de la Suisse*, 114 Livraison. Berne, 1897.

Proceedings of the Association of Medical Officers of American Institutions for Idiotic and Feeble-minded Persons, 1876-1899. Subsequently, Journal of Psychoasthenics, Faribault, Minnesota, U.S.A.

Recherches Cliniques, etc., sur l'Epilepsie, l'Hystérie, et l'Idiotie. Paris, 1890-1904.

Zeitschrift für die Behandlung Schwachsinniger und Epileptischer. Dresden, 1882-1910.

Eos. Vienna, 1904-1910.

L'Ortofrenia (Rivista Mensile Medico-pedagogica). Lecco, 1894-1895.

Institution Bulletin (*Quarterly Journal California Institution for Feeble-minded*). Sacramento, 1890-1895.

The Training School. Vineland, New Jersey, 1904-1910.

Nordisk Tidskrift for Aandsvage, etc. Copenhagen, 1899-1910.

Berichten uber den Verbandstag der Hülfschulen Deutschlands (series). Hanover, etc.

Verhandlungen der Schweiz Conferenz für das Idiotenwesen (series). Berne, etc.

Reports of Conferences of National Special Schools Union. Liverpool, Tinling and Co.

(And Reports of British, Irish, American, and Continental Institutions for Mentally Deficient Children.)

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